

Search strategies

10/535,603

8/29/2006

Connecting via Winsock to STN

CASREACT
CAPLUS }
no usable
closest artcls.
NOT prior.

Welcome to STN International! Enter x:x

LOGINID:SSPTAMPB1626

PASSWORD:

TERMINAL (ENTER 1, 2, 3, OR ?):2

* * * * * * * * * Welcome to STN International * * * * *

NEWS 1 Web Page URLs for STN Seminar Schedule - N. America
NEWS 2 "Ask CAS" for self-help around the clock
NEWS 3 FEB 27 New STN AnaVist pricing effective March 1, 2006
NEWS 4 APR 04 STN AnaVist \$500 visualization usage credit offered
NEWS 5 MAY 10 CA/CAplus enhanced with 1900-1906 U.S. patent records
NEWS 6 MAY 11 KOREAPAT updates resume
NEWS 7 MAY 19 Derwent World Patents Index to be reloaded and enhanced
NEWS 8 MAY 30 IPC 8 Rolled-up Core codes added to CA/CAplus and USPATFULL/USPAT2
NEWS 9 MAY 30 The F-Term thesaurus is now available in CA/CAplus
NEWS 10 JUN 02 The first reclassification of IPC codes now complete in INPADOC
NEWS 11 JUN 26 TULSA/TULSA2 reloaded and enhanced with new search and display fields
NEWS 12 JUN 28 Price changes in full-text patent databases EPFULL and PCTFULL
NEWS 13 JUL 11 CHEMSAFE reloaded and enhanced
NEWS 14 JUL 14 FSTA enhanced with Japanese patents
NEWS 15 JUL 19 Coverage of Research Disclosure reinstated in DWPI
NEWS 16 AUG 09 INSPEC enhanced with 1898-1968 archive
NEWS 17 AUG 28 ADISCTI Reloaded and Enhanced

NEWS EXPRESS JUNE 30 CURRENT WINDOWS VERSION IS V8.01b, CURRENT MACINTOSH VERSION IS V6.0c(ENG) AND V6.0Jc(JP), AND CURRENT DISCOVER FILE IS DATED 26 JUNE 2006.

NEWS HOURS STN Operating Hours Plus Help Desk Availability
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* * * * * * * * * STN Columbus * * * * *

FILE 'HOME' ENTERED AT 15:08:49 ON 29 AUG 2006

=> file casreact
COST IN U.S. DOLLARS
FULL ESTIMATED COST

| SINCE FILE ENTRY | TOTAL SESSION |
|------------------|---------------|
| 0.21 | 0.21 |

FILE 'CASREACT' ENTERED AT 15:09:02 ON 29 AUG 2006

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FILE CONTENT:1840 - 27 Aug 2006 VOL 145 ISS 9

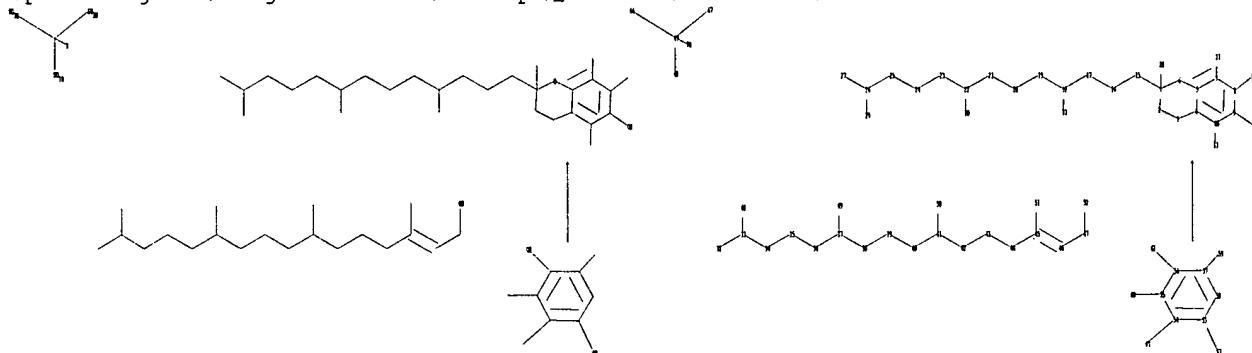
New CAS Information Use Policies, enter HELP USAGETERMS for details.

*
* CASREACT now has more than 10 million reactions *
*

Some CASREACT records are derived from the ZIC/VINITI database (1974-1991) provided by InfoChem, INPI data prior to 1986, and Biotransformations database compiled under the direction of Professor Dr. Klaus Kieslich.

This file contains CAS Registry Numbers for easy and accurate substance identification.

=>
Uploading C:\Program Files\Stnexp\Queries\10535603\10535606narrow.str



chain nodes :
11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52
59 60 61 62 63 66 67 68 69 70
ring nodes :
1 2 3 4 5 6 7 8 9 10 53 54 55 56 57 58
chain bonds :
1-15 1-28 7-11 8-12 9-14 10-13 15-16 16-17 17-18 18-19 18-31 19-20
20-21 21-22 22-23 22-30 23-24 24-25 25-26 26-27 26-29 32-33 33-34 33-48
34-35 35-36 36-37 37-38 37-49 38-39 39-40 40-41 41-42 41-50 42-43 43-44
44-45 45-46 45-51 46-47 47-52 53-63 54-61 55-60 56-62 57-59 66-69 67-69
68-69 69-70

ring bonds :
 1-6 1-2 2-3 3-4 4-5 4-10 5-6 5-7 7-8 8-9 9-10 53-54 53-58 54-55 55-56
 56-57 57-58
 exact/norm bonds :
 1-6 1-2 2-3 3-4 5-6 9-14 47-52 53-63 56-62
 exact bonds :
 1-15 1-28 7-11 8-12 10-13 15-16 16-17 17-18 18-19 18-31 19-20 20-21
 21-22 22-23 22-30 23-24 24-25 25-26 26-27 26-29 32-33 33-34 33-48 34-35
 35-36 36-37 37-38 37-49 38-39 39-40 40-41 41-42 41-50 42-43 43-44 44-45
 45-46 45-51 46-47 54-61 55-60 57-59 66-69 67-69 68-69 69-70
 normalized bonds :
 4-5 4-10 5-7 7-8 8-9 9-10 53-54 53-58 54-55 55-56 56-57 57-58

Match level :
 1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:Atom 8:Atom 9:Atom 10:Atom
 11:CLASS 12:CLASS 13:CLASS 14:CLASS 15:CLASS 16:CLASS 17:CLASS 18:CLASS
 19:CLASS 20:CLASS 21:CLASS 22:CLASS 23:CLASS 24:CLASS 25:CLASS 26:CLASS
 27:CLASS 28:CLASS 29:CLASS 30:CLASS 31:CLASS 32:CLASS 33:CLASS 34:CLASS
 35:CLASS 36:CLASS 37:CLASS 38:CLASS 39:CLASS 40:CLASS 41:CLASS 42:CLASS
 43:CLASS 44:CLASS 45:CLASS 46:CLASS 47:CLASS 48:CLASS 49:CLASS 50:CLASS
 51:CLASS 52:CLASS 53:Atom 54:Atom 55:Atom 56:Atom 57:Atom 58:Atom 59:CLASS
 60:CLASS 61:CLASS 62:CLASS 63:CLASS 66:CLASS 67:CLASS 68:CLASS 69:CLASS
 70:CLASS

fragments assigned product role:
 containing 1

fragments assigned reactant/reagent role:
 containing 32
 containing 53
 containing 66

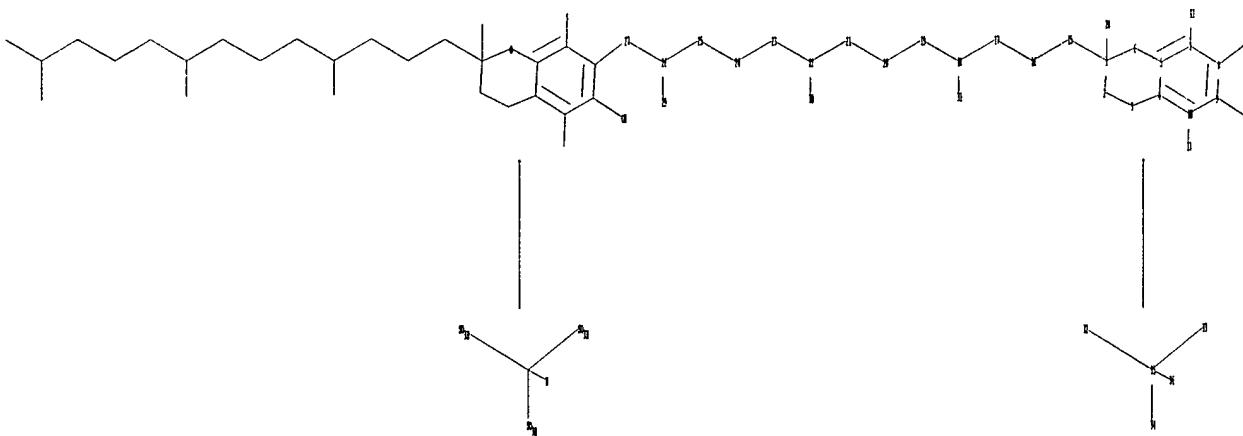
node mappings:
 9:56

L1 STRUCTURE UPLOADED

=> s 11 ful
 FULL SEARCH INITIATED 15:10:13 FILE 'CASREACT'
 SCREENING COMPLETE - 0 REACTIONS TO VERIFY FROM 0 DOCUMENTS
 100.0% DONE 0 VERIFIED 0 HIT RXNS 0 DOCS
 SEARCH TIME: 00.00.01

L2 0 SEA SSS FUL L1 (0 REACTIONS)

=>
 Uploading C:\Program Files\Stnexp\Queries\10535603\10535606narrow1.str



```

chain nodes :
11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
32 33 34 35 36
ring nodes :
1 2 3 4 5 6 7 8 9 10
chain bonds :
1-15 1-28 7-11 8-12 9-14 10-13 15-16 16-17 17-18 18-19 18-31 19-20
20-21 21-22 22-23 22-30 23-24 24-25 25-26 26-27 26-29 32-35 33-35 34-35
35-36
ring bonds :
1-6 1-2 2-3 3-4 4-5 4-10 5-6 5-7 7-8 8-9 9-10
exact/norm bonds :
1-6 1-2 2-3 3-4 5-6 9-14
exact bonds :
1-15 1-28 7-11 8-12 10-13 15-16 16-17 17-18 18-19 18-31 19-20 20-21
21-22 22-23 22-30 23-24 24-25 25-26 26-27 26-29 32-35 33-35 34-35 35-36
normalized bonds :
4-5 4-10 5-7 7-8 8-9 9-10

Match level :
1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:Atom 8:Atom 9:Atom 10:Atom
11:CLASS 12:CLASS 13:CLASS 14:CLASS 15:CLASS 16:CLASS 17:CLASS 18:CLASS
19:CLASS 20:CLASS 21:CLASS 22:CLASS 23:CLASS 24:CLASS 25:CLASS 26:CLASS
27:CLASS 28:CLASS 29:CLASS 30:CLASS 31:CLASS 32:CLASS 33:CLASS 34:CLASS
35:CLASS 36:CLASS
fragments assigned product role:
containing 1
fragments assigned reactant/reagent role:
containing 32

```

L3 STRUCTURE UPLOADED

=> s 13 ful
FULL SEARCH INITIATED 15:11:50 FILE 'CASREACT'
SCREENING COMPLETE - 0 REACTIONS TO VERIFY FROM 0 DOCUMENTS
100.0% DONE 0 VERIFIED 0 HIT RXNS 0 DOCS
SEARCH TIME: 00.00.01

L4 0 SEA SSS FUL L3 (0 REACTIONS)

=> file reg
COST IN U.S. DOLLARS SINCE FILE TOTAL
ENTRY SESSION
FULL ESTIMATED COST 223.36 223.57

FILE 'REGISTRY' ENTERED AT 15:14:29 ON 29 AUG 2006
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STRUCTURE FILE UPDATES: 28 AUG 2006 HIGHEST RN 904961-01-9
DICTIONARY FILE UPDATES: 28 AUG 2006 HIGHEST RN 904961-01-9

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experimental property data in the original document. For information
on property searching in REGISTRY, refer to:

<http://www.cas.org/ONLINE/UG/regprops.html>

=>
Uploading C:\Program Files\Stnexp\Queries\10535603\10535606tocopherol.str

chain nodes :
11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
ring nodes :
1 2 3 4 5 6 7 8 9 10
chain bonds :
1-15 1-28 7-11 8-12 9-14 10-13 15-16 16-17 17-18 18-19 18-31 19-20
20-21 21-22 22-23 22-30 23-24 24-25 25-26 26-27 26-29
ring bonds :
1-6 1-2 2-3 3-4 4-5 4-10 5-6 5-7 7-8 8-9 9-10

```

exact/norm bonds :
1-6  1-2  2-3  3-4  5-6  9-14
exact bonds :
1-15  1-28  7-11  8-12  10-13  15-16  16-17  17-18  18-19  18-31  19-20  20-21
21-22  22-23  22-30  23-24  24-25  25-26  26-27  26-29
normalized bonds :
4-5  4-10  5-7  7-8  8-9  9-10

```

Match level :
1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:Atom 8:Atom 9:Atom 10:Atom
11:CLASS 12:CLASS 13:CLASS 14:CLASS 15:CLASS 16:CLASS 17:CLASS 18:CLASS
19:CLASS 20:CLASS 21:CLASS 22:CLASS 23:CLASS 24:CLASS 25:CLASS 26:CLASS
27:CLASS 28:CLASS 29:CLASS 30:CLASS 31:CLASS

L5 STRUCTURE UPLOADED

=>
Uploading C:\Program Files\Stnexp\Queries\10535603\10535606methanetrisulphonate.str



```

chain nodes :
1 2 3 4 5
chain bonds :
1-4 2-4 3-4 4-5
exact bonds :
1-4 2-4 3-4 4-5

```

Match level :
1:CLASS 2:CLASS 3:CLASS 4:CLASS 5:CLASS

L6 STRUCTURE UPLOADED

FILE 'CAPLUS' ENTERED AT 15:15:16 ON 29 AUG 2006
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FILE COVERS 1907 - 29 Aug 2006 VOL 145 ISS 10
FILE LAST UPDATED: 28 Aug 2006 (20060828/ED)

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=> s 15 and 16
REG1stRY INITIATED
Substance data SEARCH and crossover from CAS REGISTRY in progress...
Use DISPLAY HITSTR (or FHITSTR) to directly view retrieved structures.

SAMPLE SEARCH INITIATED 15:15:20 FILE 'REGISTRY'
SAMPLE SCREEN SEARCH COMPLETED - 147 TO ITERATE

100.0% PROCESSED 147 ITERATIONS 25 ANSWERS
SEARCH TIME: 00.00.01

FULL FILE PROJECTIONS: ONLINE **COMPLETE**
BATCH **COMPLETE**
PROJECTED ITERATIONS: 2213 TO 3667
PROJECTED ANSWERS: 200 TO 800

L7 25 SEA SSS SAM L5

L8 65 L7 .

REG1stRY INITIATED
Substance data SEARCH and crossover from CAS REGISTRY in progress...
Use DISPLAY HITSTR (or FHITSTR) to directly view retrieved structures.

SAMPLE SEARCH INITIATED 15:15:21 FILE 'REGISTRY'
SAMPLE SCREEN SEARCH COMPLETED - 6 TO ITERATE

100.0% PROCESSED 6 ITERATIONS 0 ANSWERS
SEARCH TIME: 00.00.01

FULL FILE PROJECTIONS: ONLINE **COMPLETE**
BATCH **COMPLETE**
PROJECTED ITERATIONS: 6 TO 266
PROJECTED ANSWERS: 0 TO 0

L9 0 SEA SSS SAM L6

L10 0 L9

L11 0 L8 AND L10

=> s 15

REGISTRY INITIATED

Substance data SEARCH and crossover from CAS REGISTRY in progress...
Use DISPLAY HITSTR (or FHITSTR) to directly view retrieved structures.

SAMPLE SEARCH INITIATED 15:16:54 FILE 'REGISTRY'
SAMPLE SCREEN SEARCH COMPLETED - 147 TO ITERATE

100.0% PROCESSED 147 ITERATIONS 25 ANSWERS
SEARCH TIME: 00.00.03

FULL FILE PROJECTIONS: ONLINE **COMPLETE**
PROJECED ITERATIONS: 2213 TO 3667
PROJECED ANSWERS: 200 TO 800

L12 25 SEA SSS SAM L5

L13 65 L12

=> s 16

REGISTRY INITIATED

Substance data SEARCH and crossover from CAS REGISTRY in progress...
Use DISPLAY HITSTR (or FHITSTR) to directly view retrieved structures.

SAMPLE SEARCH INITIATED 15:17:11 FILE 'REGISTRY'
SAMPLE SCREEN SEARCH COMPLETED - 6 TO ITERATE

100.0% PROCESSED 6 ITERATIONS 0 ANSWERS
SEARCH TIME: 00.00.01

| | | |
|------------------------|--------|--------------|
| FULL FILE PROJECTIONS: | ONLINE | **COMPLETE** |
| | BATCH | **COMPLETE** |
| PROJECTED ITERATIONS: | 6 TO | 266 |
| PROJECTED ANSWERS: | 0 TO | 0 |

L14 0 SEA SSS SAM L6

L15 0 L14

FILE 'REGISTRY' ENTERED AT 15:19:17 ON 29 AUG 2006
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DICTIONARY FILE UPDATES: 28 AUG 2006 HIGHEST RN 904961-01-9

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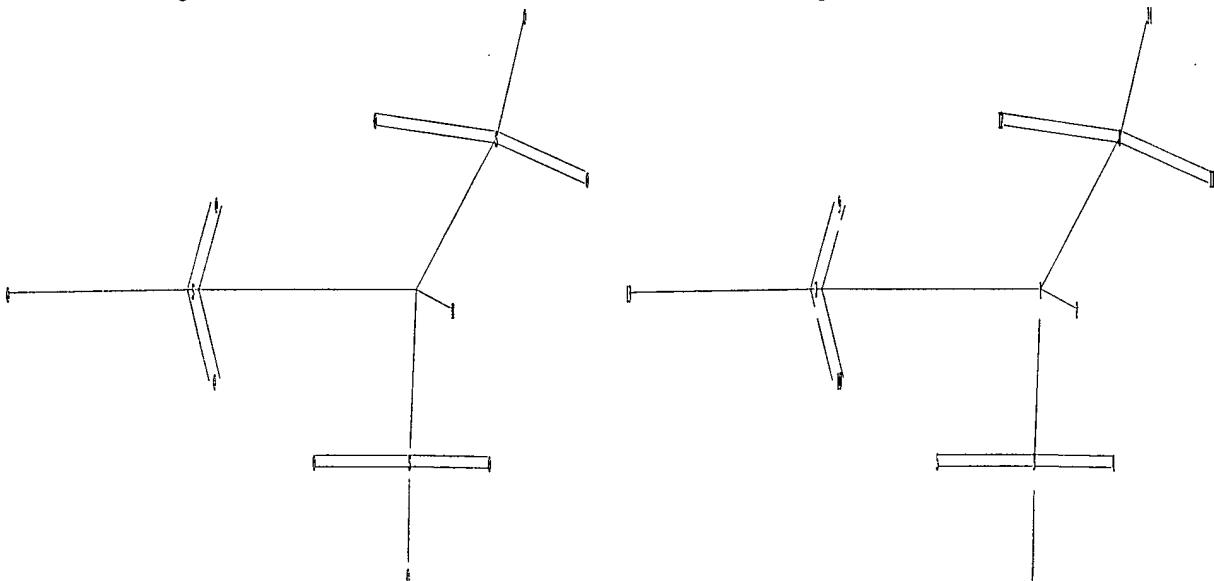
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REGISTRY includes numerically searchable data for experimental and predicted properties as well as tags indicating availability of experimental property data in the original document. For information on property searching in REGISTRY, refer to:

<http://www.cas.org/ONLINE/UG/regprops.html>

=>

Uploading C:\Program
Files\Stnexp\Queries\10535603\10535606methanetrисулфонатwithoutH.str



chain nodes :

1 2 3 4 5 6 7 8 9 10 11 12 13 14

chain bonds :

1-2 1-3 1-7 1-8 3-4 3-5 3-6 7-9 7-10 7-13 8-11 8-12 8-14

exact/norm bonds :

1-3 1-7 1-8 3-4 3-5 3-6 7-9 7-10 7-13 8-11 8-12 8-14

exact bonds :

1-2

Match level :

1:CLASS 2:CLASS 3:CLASS 4:CLASS 5:CLASS 6:CLASS 7:CLASS 8:CLASS 9:CLASS
10:CLASS 11:CLASS 12:CLASS 13:CLASS 14:CLASS

L16 STRUCTURE uploaded

=> s 116
SAMPLE SEARCH INITIATED 15:19:31 FILE 'REGISTRY'

SAMPLE SCREEN SEARCH COMPLETED - 1 TO ITERATE
100.0% PROCESSED 1 ITERATIONS 0 ANSWERS
SEARCH TIME: 00.00.01

FULL FILE PROJECTIONS: ONLINE **COMPLETE**
BATCH **COMPLETE**
PROJECTED ITERATIONS: 1 TO 80
PROJECTED ANSWERS: 0 TO 0

L17 0 SEA SSS SAM L16

L17 0 SEA SSS SAM L16

=> s 116 ful
FULL SEARCH INITIATED 15:19:58 FILE 'REGISTRY'
FULL SCREEN SEARCH COMPLETED - 53 TO ITERATE

100.0% PROCESSED 53 ITERATIONS 15 ANSWERS
SEARCH TIME: 00.00.01

L18 15 SEA SSS FUL L16

```
=> d ibib hitstr 1-15  
'IBIB' IS NOT A VALID FORMAT FOR FILE 'REGISTRY'  
'HITSTR' IS NOT A VALID FORMAT FOR FILE 'REGISTRY'
```

The following are valid formats:

Substance information can be displayed by requesting individual fields or predefined formats. The predefined substance formats are: (RN = CAS Registry Number)

| | |
|--------|---|
| REG | - RN |
| SAM | - Index Name, MF, and structure - no RN |
| FIDE | - All substance data, except sequence data |
| IDE | - FIDE, but only 50 names |
| SQIDE | - IDE, plus sequence data |
| SQIDE3 | - Same as SQIDE, but 3-letter amino acid codes are used |
| SQD | - Protein sequence data, includes RN |
| SQD3 | - Same as SQD, but 3-letter amino acid codes are used |
| SQN | - Protein sequence name information, includes RN |
| CALC | - Table of calculated properties |
| EPROP | - Table of experimental properties |
| PROP | - EPROP and CALC |

Any CA File format may be combined with any substance format to obtain CA references citing the substance. The substance formats must be cited first. The CA File predefined formats are:

ABS -- Abstract
APPS -- Application and Priority Information
BIB -- CA Accession Number, plus Bibliographic Data
CAN -- CA Accession Number
CBIB -- CA Accession Number, plus Bibliographic Data (compressed)
IND -- Index Data
IPC -- International Patent Classification
PATS -- PI, SO
STD -- BIB, IPC, and NCL

IABS -- ABS, indented, with text labels
IBIB -- BIB, indented, with text labels
ISTD -- STD format, indented

OBIB ----- AN, plus Bibliographic Data (original)
OIBIB ----- OBIB, indented with text labels

SBIB ----- BIB, no citations
SIBIB ----- IBIB, no citations

The ALL format gives FIDE BIB ABS IND RE, plus sequence data when it is available.

The MAX format is the same as ALL.

The IALL format is the same as ALL with BIB ABS and IND indented, with text labels.

For additional information, please consult the following help messages:

HELP DFIELDS -- To see a complete list of individual display fields.
HELP FORMATS -- To see detailed descriptions of the predefined formats.
ENTER DISPLAY FORMAT (IDE):end

=> s 116 ful
FULL SEARCH INITIATED 15:20:22 FILE 'REGISTRY'
FULL SCREEN SEARCH COMPLETED - 53 TO ITERATE

100.0% PROCESSED 53 ITERATIONS 15 ANSWERS
SEARCH TIME: 00.00.01

L19 15 SEA SSS FUL L16

=> file caplus
COST IN U.S. DOLLARS SINCE FILE TOTAL
ENTRY SESSION
FULL ESTIMATED COST 333.88 564.25

FILE 'CAPLUS' ENTERED AT 15:20:25 ON 29 AUG 2006
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FILE COVERS 1907 - 29 Aug 2006 VOL 145 ISS 10
FILE LAST UPDATED: 28 Aug 2006 (20060828/ED)

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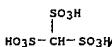
=> s 119
L20 37 L19

=> d ibib hitstr abs 1-37

L20 ANSWER 1 OF 37 CAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 2005:426557 CAPLUS
 DOCUMENT NUMBER: 142:463900
 TITLE: Acylation process for the preparation of 2,3,5-trimethylhydroquinone diacylates in the presence of methanetrisulfonic acid catalyst
 INVENTOR(S): Aquino, Fabrice; Bonrath, Werner; Pace, Francesco
 PATENT ASSIGNEE(S): DSH IP Assets B.V., Neth.
 SOURCE: PCT Int. Appl., 10 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|------|----------|------------------|------------|
| WO 200504775 | A1 | 20050519 | WO 2004-EPI12058 | 20041026 |
| W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, T2, UA, US | | | | |
| RW: BW, GH, GM, KE, LS, MW, MZ, TA, SD, SL, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG | | | | |
| EP 1680392 | A1 | 20060719 | EP 2004-790843 | 20041026 |
| R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, FI, RO, CY, TR, BG, CZ, EE, HU, PL, SK | | | | |
| PRIORITY APPLN. INFO.: | | | EP 2003-25513 | A 20031107 |
| | | | WO 2004-EPI12058 | W 20041026 |

OTHER SOURCE(S): CASREACT 142:463900
 IT 54322-33-7, Methanetrisulfonic acid
 RL: CAT (Catalyst used); USES (Uses)
 (acylation process for preparation of 2,3,5-trimethylhydroquinone diacylates
 in presence of methanetrisulfonic acid catalyst)
 RN 54322-33-7 CAPLUS
 CN Methanetrisulfonic acid (7CI, 9CI) (CA INDEX NAME)



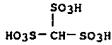
AB 2,3,5-trimethyl-1,4-hydroquinone diacylates (e.g., 2,3,5-trimethyl-1,4-benzquinone diacetate), useful as intermediates in the preparation of α -tocopherol (no data), are obtained in high yield and selectivity by reacting 3,5,5-trimethyl-1,4-benzquinone with an acylating agent (e.g., acetic anhydride) in the presence of catalytic quantities of methanetrisulfonic acid.

REFERENCE COUNT: 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

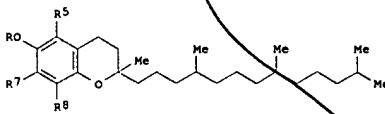
L20 ANSWER 2 OF 37 CAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 2004:965239 CAPLUS
 DOCUMENT NUMBER: 141:395687
 TITLE: Process for the manufacture of tocyl and tocopheryl acylates
 INVENTOR(S): Bonrath, Werner; Haas, Alois; Hopmann, Simone; Netscher, Thomas; Pauling, Horst
 PATENT ASSIGNEE(S): DSH IP Assets B.V., Neth.
 SOURCE: PCT Int. Appl., 15 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|------|----------|-----------------|------------|
| WO 2004096700 | A1 | 20041111 | WO 2004-EPI4144 | 20040419 |
| W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PS, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, T2, UA, US, UZ, VC, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG | | | | |
| RW: BW, GH, GM, KE, DR, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG | | | | |
| PRIORITY APPLN. INFO.: | | | EP 2003-9522 | A 20030428 |

OTHER SOURCE(S): CASREACT 141:395687; MARPAT 141:395687
 IT 54322-33-7, Methanetrisulfonic acid
 RL: CAT (Catalyst used); USES (Uses)
 (process for manufacture of tocyl and tocopherol acylates using perfluoroalkylsulfonyl catalysts)
 RN 54322-33-7 CAPLUS
 CN Methanetrisulfonic acid (7CI, 9CI) (CA INDEX NAME)



GI



AB A process for the manufacture of tocyl acylate I [R = acyl; R1 = R2 = R3 = H]

L20 ANSWER 1 OF 37 CAPLUS COPYRIGHT 2006 ACS on STN (Continued)

L20 ANSWER 2 OF 37 CAPLUS COPYRIGHT 2006 ACS on STN (Continued)
 or a tocopheryl acylate I [R = acyl; R5 = R7 = R8 = Me, R5 = H, R7 = R8 = Me, etc.) comprised reacting a corresponding tocyl or tocopherol with an acylating agent in the presence of a catalyst of the general formula HCR1R2R3 [Wherein R1, R2 and R3 each signify the sulfo group, or R1, R2 and R3 each signify a perfluoroalkylsulfonyl group whereby at least two of

R1, R2 and R3 are identical such perfluoroalkyl-sulfonyl groups, or R1 signifies the pentafluorophenyl-sulfonyl group and R2 and R3 each signify an identical perfluoroalkylsulfonyl group]. The main com. form of vitamin E, being (all-rac)- α -tocopheryl acetate I [R = acetyl; R5 = R7 = R8 = Me], can be manufd. by acylation of (all-rac)- α -tocopherol according to this process.

REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L20 ANSWER 3 OF 37 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2004:823008 CAPLUS

DOCUMENT NUMBER: 141:334863

TITLE: Crosslinked polyoxyalkylene-polysiloxanes for use as

nonaqueous salt-type electrolytes for lithium

secondary batteries

INVENTOR(S): Barrandon, Georges; George, Catherine; Vergelati,

Carroll; Giraud, Yves

PATENT ASSIGNEE(S): Rhodia Chimie, Fr.

SOURCE: Fr. Demande, 25 PP.

CODEN: FRXXBL

DOCUMENT TYPE: Patent

LANGUAGE: French

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|--|------|----------|------------------|------------|
| FR 2853321 | A1 | 20041008 | FR 2003-4153 | 20030403 |
| FR 2853321 | B1 | 20050506 | | |
| WO 2004090037 | A1 | 20041021 | WO 2004-FR708 | 20040323 |
| W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, US, UZ, VC, VN, YU, ZA, ZM, ZW RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG | | | | |
| EP 1608705 | A1 | 20051228 | EP 2004-742318 | 20040323 |
| R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, PL, SK | | 20060614 | CN 2004-80013072 | 20040323 |
| CN 1788054 | A | | FR 2003-4153 | A 20030403 |
| PRIORITY APPLN. INFO.: | | | WO 2004-FR708 | W 20040323 |

OTHER SOURCE(S): MARPAT 141:334863

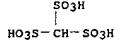
IT 54322-33-7DP, Methanetrisulfonic acid, derivs., salts

RL: DEV (Device component use); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (battery electrolytes containing; crosslinked

polyoxyalkylene-polysiloxanes for use as nonaq. salt-type electrolytes for lithium secondary batteries)

RN 54322-33-7 CAPLUS

CN Methanetrisulfonic acid (7CI, 9CI) (CA INDEX NAME)



AB Crosslinked polymeric electrolytes for lithium secondary batteries consist of: (1) a first poly(hydrogen organic siloxane) with ≥ 2 Si-H bonds per mol., (2) a second polysiloxane containing ≥ 2 Si-OH bonds per mol., (3)

L20 ANSWER 4 OF 37 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2004:823007 CAPLUS

DOCUMENT NUMBER: 141:334862

TITLE: Photochemical crosslinked epoxy-polyoxyalkylene-polysiloxanes for use as nonaqueous salt-type electrolytes for lithium secondary batteries

INVENTOR(S): Gambut, Lucile; Vergelati, Carroll; Sanchez, Jean Yves;

Alloin, Fannie

PATENT ASSIGNEE(S): Rhodia Chimie, Fr.; Rhone Poulen Chimie

SOURCE: Fr. Demande, 30 PP.

CODEN: FRXXBL

DOCUMENT TYPE: Patent

LANGUAGE: French

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

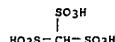
| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|--|------|----------|------------------|------------|
| FR 2853320 | A1 | 20041008 | FR 2003-4130 | 20030403 |
| FR 2853320 | B1 | 20050506 | | |
| WO 2004091033 | A2 | 20041021 | WO 2004-FR707 | 20040323 |
| WO 2004091033 | A3 | 20050714 | | |
| W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, US, UZ, VC, VN, YU, ZA, ZM, ZW RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG | | | | |
| EP 1609205 | A2 | 20051228 | EP 2004-742317 | 20040323 |
| R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, PL, SK | | 20060607 | CN 2004-80012563 | 20040323 |
| CN 1784806 | A | | FR 2003-4150 | A 20030403 |
| PRIORITY APPLN. INFO.: | | | WO 2004-FR707 | W 20040323 |

OTHER SOURCE(S): MARPAT 141:334862

IT 54322-33-7DP, Methanetrisulfonic acid, derivs., salts
RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (battery electrolytes containing; photochem. crosslinked epoxy-polyoxyalkylene-polysiloxanes for use as nonaq. salt-type electrolytes for lithium secondary batteries)

RN 54322-33-7 CAPLUS

CN Methanetrisulfonic acid (7CI, 9CI) (CA INDEX NAME)



AB Crosslinked polymeric electrolytes for lithium secondary batteries are prepared from a poly(ganosiloxane grafted with polyoxyalkylene and epoxy functions, followed by radiochem. or photochem. (e.g., UV-induced)

L20 ANSWER 3 OF 37 CAPLUS COPYRIGHT 2006 ACS on STN (Continued)

a dehydrogenation-condensation catalyst, and (4) ≥ 1 salt electrolyte. The polyoxyalkylene ether functions are derived from polyoxyethylene, polyoxypropylene, or their mono-Me ethers. The dehydrogenation-condensation catalysts are typically metal complexes

based on Pt, B, Rh, Pd, Sn, or Ir, preferably Karstedt (hydrosilylation) catalysts of formula $\text{IrCl}(\text{C}_6\text{H}_5)_2(\text{Ph}_3)$. Suitable salt electrolytes include

LiClO_4 , LiBF_4 , LiAsF_6 , $\text{CF}_3\text{SO}_3\text{Li}$, $\text{LiN}(\text{CF}_3\text{SO}_2)_2$, and $\text{LiN}(\text{C}_2\text{F}_5\text{SO}_2)_2$ in a non-aq. electrolyte solvent, as well as other cations (e.g., transition metal cations, selected from Mn, Fe, Co, Ni, Cu, Zn, Ca, and Ag). Addnl.

ions include ammonium, amidinium, guanidinium cations, halides, ClO_4^- , SCN^- , BF_4^- , NO_3^- , AsF_6^- , PF_6^- , RSO_3^- ($\text{R} =$ stearyl, CF_3 , octyl, dodecylphenyl, and Cl-6-perfluoroalkyl and -perfluoroaryl), and $(\text{RAsO}_2)_2(\text{RSO}_2)_2$ ($\text{R} =$ Cl-6-perfluoroalkyl and -perfluoroaryl).

REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE

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L20 ANSWER 4 OF 37 CAPLUS COPYRIGHT 2006 ACS on STN (Continued)

Crosslinking in the presence of a photosensitizer. The crosslinked epoxy-polyoxyalkylene-polysiloxanes have the general formula $\text{R}_1\text{xR}_2\text{yR}_3\text{zSiO}(4-x-z)/_2$, in which R_1 -3 are Cl-12-alkyl, C5-10-cycloalkyl, C6-18-aryl alkyl, or -OR4 ($\text{R} =$ H, or Cl-15-alkyl; and $x + y + z = 1-3$).

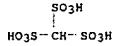
The product polysiloxanes (typically prepnd. from Si-H bond-contg. polysiloxanes by hydrosilylation grafting with allyl-terminated polyoxyalkylenes and epoxides) are then combined with org. salts to form the battery electrolytes. Suitable salt electrolytes include LiClO_4 , LiBF_4 , LiAsF_6 , $\text{CF}_3\text{SO}_3\text{Li}$, $\text{LiN}(\text{CF}_3\text{SO}_2)_2$, and $\text{LiN}(\text{C}_2\text{F}_5\text{SO}_2)_2$, other cations (e.g., transition metal cations); ammonium, amidinium, and guanidinium salts; org. sulfonates, imidodisulfonates, methanetrisulfonates, organoboron complex salts, ferricenium salts, and other onium salts (esp. iodonium and sulfonium compds.).

REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE

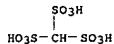
FORMAT

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L20 ANSWER 8 OF 37 CAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1997:69364 CAPLUS
 DOCUMENT NUMBER: 126:211808
 TITLE: Investigations on the acid-strength of alkane polysulfonic acids
 AUTHOR(S): Jueschke, Ralf; Sartori, Peter
 CORPORATE SOURCE: Fachbereich 6 Anorganische Chem., Gerhard-Mercator Univ., Duisburg, D-47048, Germany
 SOURCE: Zeitschrift fuer Naturforschung, B: Chemical Sciences (1996), 51(12), 1691-1700
 PUBLISHER: CODEN: ZNBSEN; ISSN: 0932-0776
 DOCUMENT TYPE: Verlag der Zeitschrift fuer Naturforschung
 LANGUAGE: Journal
 German
 IT 54322-33-7, Methanetrisulfonic acid
 RL: PRP (Properties)
 (preparation of silyl alkane polysulfonates and estimation of acidity
 by correlation with 29Si-NMR shift;
 RN 54322-33-7 CAPLUS
 CN Methanetrisulfonic acid (7CI, 9CI) (CA INDEX NAME)

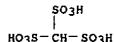


IT 55110-91-3
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (preparation of silyl alkane polysulfonates and estimation of acidity
 by correlation with 29Si-NMR shift)
 RN 55110-91-3 CAPLUS
 CN Methanetrisulfonic acid, tripotassium salt (3CI, 9CI) (CA INDEX NAME)

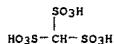


● 3 K
 IT 75533-77-6P 187610-57-7P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
 (preparation of silyl alkane polysulfonates and estimation of acidity
 by correlation with 29Si-NMR shift)
 RN 75533-77-6 CAPLUS
 CN Methanetrisulfonic acid, barium salt (2:3) (9CI) (CA INDEX NAME)

L20 ANSWER 9 OF 37 CAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1994:630311 CAPLUS
 DOCUMENT NUMBER: 121:230311
 TITLE: Improvement of the synthesis of the tripotassium methanetrisulfonate monohydrate
 AUTHOR(S): Sartori, Peter; Jueschke, Ralf
 CORPORATE SOURCE: Fachbereich 6 Anorg. Chem., Univ.-CH, Duisburg, Germany
 SOURCE: Journal fuer Praktische Chemie/Chemiker-Zeitung (1994), 336(4), 373-4
 CODEN: JPCCEM; ISSN: 0941-1216
 DOCUMENT TYPE: Journal
 LANGUAGE: German
 OTHER SOURCE(S): CASREACT 121:230311
 IT 54322-33-7, Methanetrifluoride acid
 RL: FMU (Formation, unclassified); RCT (Reactant); FORM (Formation, nonpreparative); RACT (Reactant or reagent)
 (Improvement of the synthesis of the tripotassium methanetrifluoride monohydrate)
 RN 54322-33-7 CAPLUS
 CN Methanetrifluoride acid (7CI, 9CI) (CA INDEX NAME)



IT 73224-87-0P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (Improvement of the synthesis of the tripotassium methanetrifluoride monohydrate)
 RN 73224-87-0 CAPLUS
 CN Methanetrifluoride acid, tripotassium salt, monohydrate (9CI) (CA INDEX NAME)

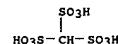


● 3 K

● H₂O

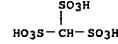
AB The Bagnall-Backer method for the preparation of the title compound [via decarboxylation of acetanilide in SO₃/H₂SO₄ to give (HO₃S)C₆H₃NH₂ and HC(SO₃H)₃ (I) then CaO and K₂CO₃ to give HC(SO₃K)₃·H₂O (II)] is improved by the decarboxylation of acetone in SO₃/H₂SO₄ to give I which with KOH gives 49% II.

L20 ANSWER 8 OF 37 CAPLUS COPYRIGHT 2006 ACS on STN (Continued)



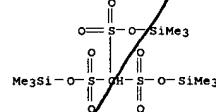
● 3/2 Ba

RN 187610-57-7 CAPLUS
 CN Methanetrisulfonic acid, trisilver(1+) salt (9CI) (CA INDEX NAME)



● 3 Ag(I)

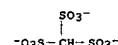
IT 187610-60-2P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation of silyl alkane polysulfonates and estimation of acidity
 by correlation with 29Si-NMR shift)
 RN 187610-60-2 CAPLUS
 CN Methanetrisulfonic acid, tri(trimethylsilyl) ester (9CI) (CA INDEX NAME)



AB The acidity of alkane polysulfonic acids was measured using the correlation between the 29Si-NMR shift of the corresponding Me₃Si ester of an acid and the pK₁ of the acid. The alkane polysulfonates RCH(SO₃SiMe₃)₂, R₂C(SO₃SiMe₃)₂, RC(SO₃SiMe₃)₃, and Me₃SiOS(R₁2)nSO₃SiMe₃ (R = H, F, Cl, Br, I; R₁ = H, F; n = 1-5) were prepared and studied.

L20 ANSWER 10 OF 37 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1989:573247 CAPLUS
 DOCUMENT NUMBER: 111:173247
 TITLE: The duodecat rule. Part 2. C-H hydrogen bonding by sulfonyl compounds
 AUTHOR(S): Robinson, E. A.
 CORPORATE SOURCE: Erindale Coll., Univ. Toronto, Mississauga, ON, L5L 1C6, Can.
 SOURCE: THEOCHEM (1989), 55, 29-41
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 IT 123177-61-7
 RL: PRP (Properties)
 (total bond orders at sulfur in)
 RN 123177-61-7 CAPLUS
 CN Methanetrifluoride acid, ion(3-) (9CI) (CA INDEX NAME)



AB By combining linear relationships between log k and log r, bond order (n) and force consts. (k), where k is the CS stretching force constant of a bond of length r, a correlation is established between CS bond lengths and simple valence-bond bond orders. For a variety of S(VI) species with bonds to electroneg. ligands, including Me groups, this is used to demonstrate that the total bond order at S in these species is six, consistent with a duodecat rule. Apparently, S-CH₃ groups in compds. such as CH₃SO₂F, CH₃SO₂OH, Me₂SO₂, and related species compete with other ligands for the delocalization of electron pairs into the valence shell of the central sulfur atom, in this case through hyperconjugation. This accounts for the enhanced acidities of hydrogen atoms bonded to α -carbon atoms in such compds., and their ability to form hydrogen bonds. Evidence for hydrogen bonding in CH₃SO₂Cl, and (CH₃)₂SO₂, and in CH₃SO₂OH (via both S-OH and S-CH₃), is discussed. The use of C-H bond lengths and stretching force consts. as a possible diagnostic tool to select mols. capable of CH hydrogen bonding is also discussed.

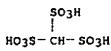
L20 ANSWER 11 OF 37 CAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1989:553222 CAPLUS
 DOCUMENT NUMBER: 111:153222
 TITLE: Process for the preparation of alkyl 3-alkoxypropionates
 INVENTOR(S): Jones, Glenn C.; Nottingham, William D.; Reynolds, Peter W.
 PATENT ASSIGNEE(S): Eastman Kodak Co., USA
 SOURCE: U.S., 4 pp.
 CODEN: USXXAM
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|------|----------|-----------------|------------|
| US 4827021 | A | 19890502 | US 1988-164663 | 19880307 |
| CA 1326242 | A1 | 19940118 | CA 1989-591956 | 19890224 |
| WO 8908636 | A1 | 19890921 | WO 1989-US763 | 19890227 |
| W: AU, JP, KR RW: AT, BE, CH, DE, FR, GB, IT, LU, NL, SE | | | | |
| AU 8933504 | A1 | 19891005 | AU 1989-33504 | 19890227 |
| AU 609288 | B2 | 19910426 | | |
| EP 403528 | A1 | 19901227 | EP 1989-903301 | 19890227 |
| EP 403528 | B1 | 19930210 | | |
| R: AT, BE, CH, DE, FR, GB, IT, LU, NL, SE | | | | |
| JP 03503282 | T2 | 19910725 | JP 1989-503132 | 19890227 |
| JP 2738967 | B2 | 19980408 | | |
| AT 85603 | E | 19930215 | AT 1989-903301 | 19890227 |
| KR 9700138 | B1 | 19970104 | KR 1989-72047 | 19891106 |
| | | | US 1988-164663 | A 19880307 |
| PRIORITY APPLN. INFO.: | | | EP 1989-903301 | A 19890227 |
| | | | WO 1989-US763 | A 19890227 |

OTHER SOURCE(S): MARPAT 111:153222
 IT 54322-33-7, Methanetrifluorosulfonic acid
 RL: CAT (Catalyst use); USES (Uses)
 (catalyst, for addition of alkoxymethane with ketene)

RN 54322-33-7 CAPLUS

CN Methanetrifluorosulfonic acid (7CI, 9CI) (CA INDEX NAME)



AB R1OCH2CR3R4CO2R2 (I; R1, R2 = Cl-8 alkyl; R3, R4 = H, alkyl, aryl), useful as solvents in the formation of coating compns., are prepared by addition of R1OCH2OR2 with R3R4C:CO in the presence of CH2(SO3H)2, CH(SO3H)3, or mixture thereof. A mixture of 23.0 g CH2(OH)2, 0.071 CH2(SO3H)2, and 0.30 and CH2:CO was stirred at 25-40° under N to give 24.9 g I (R1 = R2 = Me, R3 = R4 = H). Similarly prepared was I (R1 = R2 = Et, R3 = R4 = H).

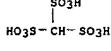
L20 ANSWER 12 OF 37 CAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1989:184717 CAPLUS
 DOCUMENT NUMBER: 102:184717
 TITLE: Alkoxylation of alcohols and phenols
 INVENTOR(S): Moody, Keith
 PATENT ASSIGNEE(S): ICI Australia Ltd., Australia
 SOURCE: Pat. Specif. (Aust.), 15 pp.
 CODEN: ALXKAF
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------------------|------|----------|-----------------|----------|
| AU 539363 | B2 | 19840809 | AU 1981-71460 | 19800613 |
| AU 8171460 | A1 | 19811217 | | |
| PRIORITY APPLN. INFO.: | | | AU 1981-71460 | 19800613 |

IT 54322-33-7
 RL: CAT (Catalyst use); USES (Uses)
 (catalyst, for alkoxylation of alcohols and phenols)

RN 54322-33-7 CAPLUS

CN Methanetrifluorosulfonic acid (7CI, 9CI) (CA INDEX NAME)



AB Alcohols and phenols were alkoxylated with alkylene oxides in the presence of catalysts consisting of organic sulfonic acids or their salts. The sulfonic acids chosen have an acid strength greater than that of methanesulfonic acid; the cations are chosen from first row transition metals, Be, Mg, Ca, B, Al, Sn, or Zr. Thus, BuOH was ethoxylated with ethylene oxide (6:1 mol ratio) at 160° in the presence of Zn methanesulfonate to give 93.8% ethylene glycol monobutyl ether and small amounts of diethylene glycol monobutyl ether (20.9:1 mol ratio). Other catalyst used were Zn benzenesulfonate or trifluoromethanesulfonate and Al methanesulfonate.

L20 ANSWER 12 OF 37 CAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1986:431749 CAPLUS
 DOCUMENT NUMBER: 105:31749
 TITLE: The electrochemistry of a dimeric and two monomeric cis-trioxomolybdenum(VI) complexes containing cyclic triamine ligands in protic and aprotic media: model compounds for the active sites in formate

dehydrogenase
 AUTHOR(S): Herrmann, Willy; Wieghardt, Karl
 CORPORATE SOURCE: Ruhr-Univ., Bochum, D-4630, Fed. Rep. Ger.
 SOURCE: Polyhedron (1986), 5(1/2), 513-20
 CODEN: PLYHDE; ISSN: 0277-5387
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 IT 54322-33-7
 RL: PRP (Properties)
 (electrochem. reduction of molybdenum trioxotriazacyclononane or molybdenum trioxotrimethyltriazacyclononane nuclear and dinuclear complexes on mercury in)

RN 54322-33-7 CAPLUS
 CN Methanetrifluorosulfonic acid (7CI, 9CI) (CA INDEX NAME)



AB The electrochem. of cis-MoO3L (I), (L = N,N',N''-trimethyl-1,4,7-triazacyclononane) or cis-MoO3L' (II), (L' = 1,4,7-triazacyclononane) was in protic (CH3SO3H) and aprotic media (DMF) by cyclic voltammetry at the hanging Hg drop (HMD) electrode. I and II are quasi-reversibly reduced by

a 2e-, 4H+ step in acidic solns. to give monomeric [Mo(IV)(OH2)2]2+ and [Mo(IV)(OH2)2]2-, which in the case of I is further reduced to a monomeric Mo(III) species which then undergoes a reversible chemical reaction (dimerization). In contrast, reduced II undergoes chemical reactions (dimerization or trimerization of [L'MoO(OH2)2]2+ or comproporation reactions) due to the fact that the unmethylated cyclic amine in II is sterically less demanding. I and II are redox-inactive in DMF (+1.0 to -1.7 V vs. Ag-AgCl at a Pt or a glassy C electrode). Dimeric [L2Mo2O5]2[Fe6]2, (III), is reversibly reduced to a Mo(V)2 dimer (2e-, 2H+ process) and, finally, to a Mo(III)2 dimer (4e-, 4H+) in 0.1M CH3SO3H at an HMD/electrode, contrasting with the behavior in aprotic medium (DMF), Pt electrode, where 2 reversible 1-electron transfer processes generating the blue, mixed-valence species Mo(VI)/(V) and an Mo(V)2 dimer were observed

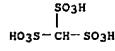
L20 ANSWER 14 OF 37 CAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1989:523106 CAPLUS
 DOCUMENT NUMBER: 99:123106
 TITLE: N-phenylcarbamate ester oligomers
 PATENT ASSIGNEE(S): Asahi Chemical Industry Co., Ltd., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 6 pp.
 CODEN: JKXKAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------------------|------|----------|-----------------|----------|
| JP 58085852 | A2 | 19830523 | JP 1981-183739 | 19811118 |
| JP 62008430 | B4 | 19870223 | | |
| PRIORITY APPLN. INFO.: | | | JP 1981-183739 | 19811118 |

IT 54322-33-7
 RL: CAT (Catalyst use); USES (Uses)
 (catalysts, for oligomerization of phenylcarbamate esters with methylene donors)

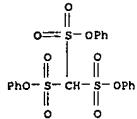
RN 54322-33-7 CAPLUS

CN Methanetrifluorosulfonic acid (7CI, 9CI) (CA INDEX NAME)

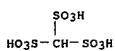


AB N-Phenylcarbamate esters are oligomerized with methylene donors in the presence of solid-supported polysulfonic acids. Thus, 10g kieselguhr and 3.5g CH2(SO3H)2 (I) [503-40-2] in 10 mL H2O was dried and baked 6 h at 200° to give catalyst containing 14% I. A mixture of the above catalyst 3, Et N-phenylcarbamate (II) 8.25, and dimethylmethane 1g in 40 mL sulfolane was heated 1 h in an autoclave at 140° to convert 56% II to oligomers (87093-19-4) containing 73% 1,1'-methylenebis(4-ethoxycarbonylaminobenzene) (10097-16-2) and 11% 1,3'-methylenebis(4-ethoxycarbonylaminobenzene) (70381-86-1).

L20 ANSWER 15 OF 37 CAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1983:504727 CAPLUS
 DOCUMENT NUMBER: 99:104727
 TITLE: Methanetrisulfonic acid derivatives
 AUTHOR(S): Yagupol'skii, Yu. L.; Savina, T. I.
 CORPORATE SOURCE: Inst. Org. Khim., Kiev, USSR
 SOURCE: Zhurnal Organicheskoi Khimii (1983), 19(1), 75-82
 DOCUMENT TYPE: Journal
 LANGUAGE: Russian
 OTHER SOURCE(S): CASREACT 99:104727
 IT 86107-38-2P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation of)
 RN 86107-38-2 CAPLUS
 CN Methanetrisulfonic acid, triphenyl ester (9CI) (CA INDEX NAME)

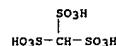


IT 54322-33-7
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reaction of, with sulfur tetrafluoride)
 RN 54322-33-7 CAPLUS
 CN Methanetrisulfonic acid (7CI, 9CI) (CA INDEX NAME)



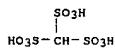
AB CH(SO₃H)₃ and SF₄ gave CH(SO₂F)₃, which with Br, iodine, or Me₃SiCl gave the corresponding RC(SO₂F)₃. CH₂(SO₂F)₂ and Ag₂O gave AgCH(SO₂F)₂, which with MeI or Cf₅SiCl gave, resp., MeCH(SO₂F)₂ and Cf₅SSCH(SO₂F)₂. 4-MeC₆H₄SO₃F and trifluoromorpholinosulfur gave 4-MeC₆H₄SO₂F.

L20 ANSWER 16 OF 37 CAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1981:174556 CAPLUS
 DOCUMENT NUMBER: 94:174556
 TITLE: 2-Hydroxyacetophenone via Fries rearrangement and related reactions. A comparative applied study
 AUTHOR(S): Hocking, Martin B.
 CORPORATE SOURCE: Dep. Chem., Univ. Victoria, Victoria, BC, V8W 2Y2, Can.
 SOURCE: Journal of Chemical Technology and Biotechnology (1979-1982) (1980), 30(11), 626-41
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 OTHER SOURCE(S): CASREACT 94:174556
 IT 54322-33-7
 RL: CAT (Catalyst used); USES (Uses)
 (catalysts, for Fries rearrangement of Ph acetate)
 RN 54322-33-7 CAPLUS
 CN Methanetrisulfonic acid (7CI, 9CI) (CA INDEX NAME)

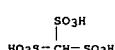


AB PhOAc was prepared directly from PhOH and AcOH in the presence of H₂SO₄; thermal rearrangement of PhOAc was studied in the presence of methanesulfonic and -trisulfonic acids, p-MeC₆H₄SO₃H, and sulfonated cation exchange resin. Catalysis by H₂SO₄, H₂SO₄·H₂O, H₃PO₄, NaHSO₄, and CaCl₂ was also studied. The catalysts gave o- and p-HOC₆H₄Ac, with larger amounts of the ortho derivative at higher temps. The rates, product ratios, and yields of these processes were compared. AlCl₃, ZnCl₂, and BF₃ all gave faster reactions than the proton acids, and higher ortho-para ratios, especially with BF₃ at low temps. The results obtained with the proton acids and other compds. and with the Lewis acids were compared. The object of the studies was to provide a com. route to pyrocatechol.

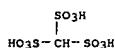
L20 ANSWER 17 OF 37 CAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1981:139146 CAPLUS
 DOCUMENT NUMBER: 94:139146
 TITLE: Tri(fluorosulfonyl)methane, HC(SO₂F)₃
 AUTHOR(S): Kloeter, Gerhard; Britzkow, Hans; Seppelt, Konrad
 CORPORATE SOURCE: Anorg. Chem. Inst. Univ. Heidelberg, Heidelberg, D-6900/1, Fed. Rep. Ger.
 SOURCE: Angewandte Chemie (1980), 92(11), 954-5
 DOCUMENT TYPE: Journal
 LANGUAGE: German
 IT 54322-33-7P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
 (preparation and reaction of, with sulfur tetrafluoride)
 RN 54322-33-7 CAPLUS
 CN Methanetrisulfonic acid (7CI, 9CI) (CA INDEX NAME)



IT 75533-77-6P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
 (preparation and reaction of, with sulfuric acid)
 RN 75533-77-6 CAPLUS
 CN Methanetrisulfonic acid, barium salt (2:3) (9CI) (CA INDEX NAME)



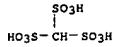
● 3/2 Ba
 IT 75533-76-5
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reaction of, with barium ion)
 RN 75533-76-5 CAPLUS
 CN Methanetrisulfonic acid, monopotassium salt (9CI) (CA INDEX NAME)



● K
 AB Successive treatment of HC(SO₃K)₃ with Ba²⁺, H₂SO₄, and SF₄ gave, via HC(SO₃Ba²⁺)₃ and HC(SO₃H)₃, HC(SO₂F)₃ (I), which is a monobasic acid with strength falling between those of HSO₃F and HNO₃. Treatment of I with bases gave the salts HC(SO₂F)₃ (M = K, Rb, Cs and Ag); crystal structures

L20 ANSWER 17 OF 37 CAPLUS COPYRIGHT 2006 ACS on STN (Continued)
 of the K and Rb salts were detd. Treatment of AgC(SO₂F)₃ with MeI or X₂ gave, resp., MeC(SO₂F)₃ and XC(SO₂F)₃ (X = Cl, Br, I). FC(SO₂F)₃ was prepd. by fluorinating I with XeF₂.

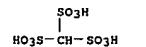
L20 ANSWER 18 OF 37 CAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1981:68557 CAPLUS
 DOCUMENT NUMBER: 94:68557
 TITLE: New electrolytes for direct methane fuel cells
 AUTHOR(S): Brummer, S. B.; Poos, J.; McHardy, J.; McVeigh, J.; Toland, D.; Turner, M.
 CORPORATE SOURCE: EIC Corp., Newton, MA, USA
 SOURCE: Report (1979), DOE/ET/11321-T1, 74 pp. Avail.: NTIS From: Energy Res. Abstr. 1980, 5(10), Abstr. No. 15977
 DOCUMENT TYPE: Report
 LANGUAGE: English
 IT 54322-33-7 RL: USES (Uses)
 (electrolytes, for direct-methane fuel cells, development and testing of)
 RN 54322-33-7 CAPLUS
 CN Methanetrifluoride acid (7CI, 9CI) (CA INDEX NAME)



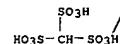
AB A program aimed at developing a fuel-cell electrolyte for the direct oxidation of CH₄ and/or impure H fuels is described. Of interest are di- and tribasic methanesulfonic acids CX₂(SO₃H)₂ and CX(SO₃H)₃ where X is H, F, or Cl. Synthetic routes to CH₂(SO₃H)₂ [503-40-2], CH(SO₃H)₃ [54322-33-7], CCl₂(SO₃H)₂ [76371-37-2], and CCl(SO₃H)₃ [76371-36-3] were identified and optimized. The diphenyl ester of CF₂(SO₃H)₂ was prepared and various approaches to CF(SO₃H)₃ [76371-37-4] were investigated. In parallel with the synthetic program, apparatus was designed and fabricated for the testing of the electrolytes under fuel-cell conditions. A new PTFE test cell was developed for testing small amounts of electrolyte. Electrodes with low Pt loading were developed for use in electrolyte evaluation. Optimum performance with H₃PO₄ was achieved using 1 mg Pt/cm² and 1 mg TFE 30/cm² deposited on TFE tape, supported on a Au-plated Ta screen, and sintered. Preliminary half-cell tests using CH₂(SO₃H)₂ and CH(SO₃H)₃ indicated that these acids are insufficiently stable for use as fuel-cell electrolytes. However, tests using CCl₂(SO₃H)₂ and CCl(SO₃H)₃ were encouraging, yielding H oxidation rates equal to or better than those using H₃PO₄. Stability tests were conducted by heating a sample of each acid at 130° for 30 days under N₂, O₂, and H₂. At the end of the test, each sample was analyzed for decomposition. In no case did IR anal. indicate significant decomposition and in the case of the chloroacids, only a trace amount of free Cl⁻ was observed. Conductivity measurements showed the aqueous acids to be of the same conductivity as aqueous H₃PO₄. The dihydrate of CH₂(SO₃H)₂ was more conductive than CF₃SO₃H·H₂O [49789-04-0] but less conductive than 100% H₃PO₄.

L20 ANSWER 19 OF 37 CAPLUS COPYRIGHT 2006 ACS on STN (Continued)
 .apprx.113° indicate an expansion from tetrahedral stereochem. and the S-C bond lengths of apprx.1.81 Å are longer than those for K₂[CH₂(SO₃H)₂] (1.77 Å) and Ca(CH₃SO₃)₂ (1.75 Å). The IR (4000 to 50 cm⁻¹) and Raman spectra of K₃[CH(SO₃)₃]·H₂O and K₃[CD(SO₃)₃]·D₂O were detd. at 77° K and interpreted in accordance with the structure, and with the use of the spectra of anhyd. K₃[CH(SO₃)₃] and of aq. solns. of the sol. Li salts. The SO₃ groups show their characteristic group frequencies: ν_{asym(C-S)} 762, ν_{asym(C-S)} 820, δ_{sym(CS)} 170, and δ_{asym(CS)} 210 cm⁻¹, resp. IR spectra of samples contg. the isotopically dil. HDO species confirm the presence of 2 types of H bond per H₂O mol.

L20 ANSWER 19 OF 37 CAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1980:145976 CAPLUS
 DOCUMENT NUMBER: 92:145976
 TITLE: Crystal structure, and the infrared and Raman spectra, of tripotassium methanetrifluoride hydrate, K₃[CH(SO₃)₃]·H₂O
 AUTHOR(S): Hall, John R.; Johnson, Robert A.; Kennard, Colin H. L.; Smith, Graham
 CORPORATE SOURCE: Dep. Chem., Univ. Queensland, Brisbane, 4067, Australia
 SOURCE: Journal of the Chemical Society, Dalton Transactions: Inorganic Chemistry (1972-1999) (1980), (1), 149-55
 CODEN: JCDTB; ISSN: 0300-9246
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 IT 73224-78-9 RL: PRP (Properties)
 (IR and Raman spectra of aqueous)
 RN 73224-78-9 CAPLUS
 CN Methanetrifluoride acid, triethylammonium salt (9CI) (CA INDEX NAME)



● 3 Li
 IT 73224-87-0 RL: PRP (Properties)
 (crystal and mol. structure, and IR and Raman spectra of)
 RN 73224-87-0 CAPLUS
 CN Methanetrifluoride acid, tripotassium salt, monohydrate (9CI) (CA INDEX NAME)

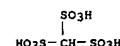


● 3 K

● H₂O

AB The crystal and mol. structure of K₃[CH(SO₃)₃]·H₂O was determined by X-ray diffraction as an aid in the assignment of the IR and Raman spectra. The structure was solved using direct methods and refined by full-matrix least squares to R 0.045 for 839 observed unique reflections. The S-C-S angles of

L20 ANSWER 20 OF 37 CAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1975:139193 CAPLUS
 DOCUMENT NUMBER: 82:139193
 TITLE: Reactions of dipotassium diazomethanedisulfonate in aqueous solution
 AUTHOR(S): Young, J. Michael
 CORPORATE SOURCE: Dep. Pharmacol., Univ. Cambridge, Cambridge, UK
 SOURCE: Journal of the Chemical Society, Perkin Transactions 1: Organic and Bio-Organic Chemistry (1972-1999) (1976), (22), 2541-3
 CODEN: JCPRB4; ISSN: 0300-922X
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 OTHER SOURCE(S): CGREACT 82:139193
 IT 55110-91-3 RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation of)
 RN 55110-91-3 CAPLUS
 CN Methanetrifluoride acid, tripotassium salt (3CI, 9CI) (CA INDEX NAME)



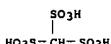
● 3 K

AB Decomposition of (KO₃S)₂CN₂ (I) in H₂O at 4° gave (KO₃S)·3CH and (KO₃S)₂C≡NNH₂, in N KOH at 70° gave (KO₃S)₂C≡NNK₂O₃K, and in aqueous piperidine at 70° gave (KO₃S)₂CH₂. I with MeOH gave (KO₃S)₂CHOMe.

L20 ANSWER 21 OF 37 CAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1975:64946 CAPLUS
 DOCUMENT NUMBER: 82:64946
 TITLE: Solid catalysts for heterogeneous reactions
 INVENTOR(S): Rona, Peter
 PATENT ASSIGNEE(S): IMI (TAMI) Institute for Research and Development
 SOURCE: Ger. Offen., 21 PP.
 CODEN: GWXXBX
 DOCUMENT TYPE: Patent
 LANGUAGE: German
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|-----------------------|------|----------|-----------------|------------|
| DE 2401958 | A1 | 19740718 | DE 1974-2401958 | 19740116 |
| US 3920582 | A | 19751118 | US 1974-430804 | 19740104 |
| GB 1446964 | A | 19760818 | GB 1974-1839 | 19740115 |
| JP 50046587 | A2 | 19750425 | JP 1974-7615 | 19740117 |
| PRIORITY APPN. INFO.: | | | IL 1973-41330 | A 19730117 |

IT 54322-33-7
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (catalyst preparation with, for heterogeneous catalysis or organic
 reactions)
 RN 54322-33-7 CAPLUS
 CN Methanetrisulfonic acid (7CI, 9CI) (CA INDEX NAME)



AB Catalysts for heterogeneously catalyzed reactions were prepared by impregnation of carriers with sulfonic acids. Thus, 50 g SiO₂-Al₂O₃ pellets were treated for 30 min with 14 g benzene-1,3-disulfonic acid in H₂O at 80°, dried for 6 hr at 150°, and calcined for 6 hr at 200° to give 60/g catalyst. A H₂O-C₂H₄ mixture of mol. ratio 1:1 was passed over this catalyst at 195° to give a C₂H₄-C₂H₅OH conversion of 0.3-0.5 mole % without splitting off acid from this catalyst.

L20 ANSWER 22 OF 37 CAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1963:468923 CAPLUS
 DOCUMENT NUMBER: 59:68923
 ORIGINAL REFERENCE NO.: 59:12707d-f
 TITLE: Alkylation of phenols
 INVENTOR(S): McConnell, Wayne V.; Davis, Herman E.
 PATENT ASSIGNEE(S): Eastman Kodak Co.
 SOURCE: 2 pp.
 DOCUMENT TYPE: Patent
 LANGUAGE: Unavailable
 PATENT INFORMATION:

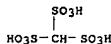
| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---------------|--|-------|-----------------|---------------|
| US 3082258 | ----- | ----- | 19630319 | US 1960-28557 |
| IT 54322-33-7 | Methanetrisulfonic acid (catalyst in alkylation of phenols) | | | 19600512 |
| RN 54322-33-7 | CAPLUS | | | |
| CN | Methanetrisulfonic acid (7CI, 9CI) (CA INDEX NAME) | | | |

$\begin{array}{c} \text{SO}_3\text{H} \\ | \\ \text{HO}_3\text{S}-\text{CH}-\text{SO}_3\text{H} \end{array}$

AB The preparation of 2,6-di-tert-butyl-4-methylphenol (I) from 4-methylphenol (II) and isobutylene using hydrated methanedi- or trisulfonic acid catalyst was described. I was useful as an antioxidant and stabilizer for fats and oils. Thus, 112 g. isobutylene was bubbled through a flask containing 108 g. II and 1.1 g. methanedisulfonic acid dihydrate (III) in 100 cc. benzene. In the initial stages the temperature varied from 25-40° due to the cooling effect of isobutylene refluxing in a dry ice-acetone cooled condenser. Thereafter the temperature was held at 40° for a total reaction time of 6 hrs. The supernatant liquid was decanted from the catalyst. Unreacted II (6%) and 2-tert-butyl-4-methylphenol (31% conversion) were extracted with aqueous NaOH. After removal of C₆H₆, I was obtained (63% conversion), m. 68-9° (50% aqueous MeOH). Under the same conditions, 5.5 g. III gave an 88% conversion to I. Only a 20% conversion resulted from use of 1,2-ethanedisulfonic acid. Benzenedisulfonic acid caused polymerization of isobutylene. When p-toluenesulfonic acid or H₂SO₄ was used in concentration of 5% based on the weight of II the product had poorer color and odor. White, odorless I could also be prepared in 84 and 80% conversions, resp., using 2.2 g. III and no solvent or using 1% by weight methanetrisulfonic acid trihydrate.

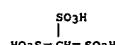
L20 ANSWER 23 OF 37 CAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1963:14557 CAPLUS
 DOCUMENT NUMBER: 58:14557
 ORIGINAL REFERENCE NO.: 58:2371g-h
 TITLE: Esterification catalysts
 INVENTOR(S): Touey, George P.; Goins, Rex H.
 PATENT ASSIGNEE(S): Eastman Kodak Co.
 SOURCE: 3 pp.
 DOCUMENT TYPE: Patent
 LANGUAGE: Unavailable
 PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---------------|---|----------------|-----------------|------|
| US 3053884 | 19620911 | US 1959-845336 | 19591009 | |
| IT 54322-33-7 | Methanetrisulfonic acid (as catalyst for esterification) | | | |
| RN 54322-33-7 | CAPLUS | | | |
| CN | Methanetrisulfonic acid (7CI, 9CI) (CA INDEX NAME) | | | |



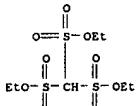
AB CH₂(SO₃H)₂ and CH₂(SO₃H)3 are superior catalysts for preparing esters by treating saturated aliphatic mono- and polyhydroxy alics. with phenyl dicarboxylic acids or saturated aliphatic carboxylic acids and their anhydrides. A lower concentration of catalyst is required and the ester produced is nearly colorless and is heat stable. Two moles phthalic anhydride and five moles BuOH were refluxed 7 hrs. in the presence of various acid catalysts. The catalyst used, the catalyst concentration based on the phthalic anhydride, and the percent phthalic acid in the product are: CH₂(SO₃H)₂, 0.1, 0.02; CH₂(SO₃H)3, 0.1, 0.03; H₂SO₄, 0.1, 0.35; MeSO₃H, 0.2, 1.6; MeC₆H₄SO₃H, 1.0, 2.0; (CH₂SO₃H)₂, 0.2, 0.85. Data are given which show the superiority of these two catalysts for the esterification of n-octyl alc. with adipic acid and glycerol with 2-ethylhexanoic acid.

L20 ANSWER 24 OF 37 CAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1953:70596 CAPLUS
 DOCUMENT NUMBER: 47:70596
 ORIGINAL REFERENCE NO.: 47:11919f-i
 TITLE: Acid-base equilibria in glacial acetic acid
 AUTHOR(S): Smith, Thor L.; Elliott, John H.
 CORPORATE SOURCE: Hercules Powder Co., Wilmington, DE
 SOURCE: Journal of the American Chemical Society (1953), 75,
 3566-71
 CODEN: JRCSAT, ISSN: 0002-7863
 DOCUMENT TYPE: Journal
 LANGUAGE: Unavailable
 IT 54322-33-7, Methanetrisulfonic acid
(ionization in AcOH)
 RN 54322-33-7 CAPLUS
 CN Methanetrisulfonic acid (7CI, 9CI) (CA INDEX NAME)



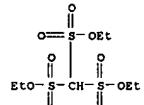
AB Values of pH for dilute solns. ($5 + 10^{-4}$ to $5 + 10^{-3}$ M) of 11 strong acids in AcOH containing 0.12% water were measured by use of indicators α -naphtholbenzene (I) and α -nitroaniline. $\text{pH} = -\log(\text{BH}^+)/(B) + \text{pK}_a$, where (BH^+) and (B) are the concns. of the acidic and basic forms of an indicator, and pK_a is the thermodynamic dissociation constant for the conjugate acid of the indicator. The pK_a for I was evaluated as 0.53. The order of increasing acid strength at equal molarities is: HCl, methanesulfonic, sulfuric, carboxymethanesulfonic, chloromethanesulfonic, chlorocarboxymethanesulfonic, HBr, perchloric, methanedisulfonic, chloromethanedisulfonic, and methanetrisulfonic acids. pH values for anhydrous solns. of 4 monobasic acids at $5 + 10^{-3}$ M were measured, and from the increased acidity found, equilibrium consts. for the reaction of the acids with water were calculated. H₂SO₄ was found to be monobasic. Dissociation consts. K_a of HCl, HBr, HClO₄, and H₂SO₄ in AcOH (calculated from conductivity data of Kolthoff and Willman (C.A. 28, 3644.1)) are $5.1 + 10^{-10}$, $1.9 + 10^{-7}$, $9 + 10^{-7}$, and $7.4 + 10^{-9}$, resp. The fact that values of ΔpK_a from conductivity and from pH data are in reasonable agreement shows that equilibrium in AcOH involve, primarily, undissociated species.

L20 ANSWER 25 OF 37 CAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1952:26486 CAPLUS
 DOCUMENT NUMBER: 46:26486
 ORIGINAL REFERENCE NO.: 46:4471e-g
 TITLE: The synthesis of certain derivatives of methionic acid
 AUTHOR(S): Shu, Rue-Cheng; Jenkins, Glenn L.; Christian, John E.
 CORPORATE SOURCE: Purdue Univ., Lafayette, IN
 SOURCE: Journal of the American Pharmaceutical Association (1912-1977) (1951), 40, 86-8
 CODEN: JPHAA3; ISSN: 0003-0465
 DOCUMENT TYPE: Journal
 LANGUAGE: Unavailable
 IT 873390-12-6, Methanethiosulfonic acid, triethyl ester
 (preparation of)
 RN 873390-12-6 CAPLUS
 CN Methanethiosulfonic acid, triethyl ester (SCI) (CA INDEX NAME)



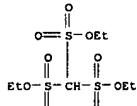
AB N,N'-Di-p-phenethylmethionamide, m. 219.2-21°, was prepared by adding CH₂(SO₂Cl)₂ in anhydrous C₆H₆ dropwise to p-phenetidine in C₆H₆ at 0°, refluxing, cooling, filtering out the precipitate, washing with cold H₂O, decolorizing with charcoal, and recrystg. from alc. dioxane. By similar procedure were prepared the following analogs: N,N'-di-o-phenetyl, m. 131-2°; N,N'-di-m-phenetyl, m. 166.8-7.8°. Methiononate esters: di-1-naphthyl, m. 136.8-7.4°; di-2-naphthyl, m. 231.5-6.1°; bis(o-methoxyphenyl), m. 99.6-100.4°.

L20 ANSWER 26 OF 37 CAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1952:26485 CAPLUS
 DOCUMENT NUMBER: 46:26485
 ORIGINAL REFERENCE NO.: 46:4471d-e
 TITLE: Trisulfonylmethanes and methanethiosulfonates
 AUTHOR(S): Samén, Evald
 CORPORATE SOURCE: Uppsala Univ., Swed.
 SOURCE: Svensk Kem. Tid. (1951), 63, 31-41
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 IT 873390-12-6, Methanethiosulfonic acid, triethyl ester
 (preparation of)
 RN 873390-12-6 CAPLUS
 CN Methanethiosulfonic acid, triethyl ester (SCI) (CA INDEX NAME)



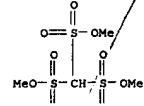
AB cf. C.A. 45, 10190b. Review of work by S. and others, with complementary expts. Refluxing CH(SO₂Et)₃ with absolute alc. and CHCl₃ produced no ester, even with H₂SO₄ as catalyst. A trisulfone can be titrated with Br and KBr (methyl orange indicator). CBr(SO₂Et)₃ refluxed with powdered Ag or K pellets in C₆H₆ failed to produce C₂(SO₂Et)₆, and a mixture of Et₂C(CO₂H)₂, PhSH, and anhydrous HCl produced no hexasulfide. Br added to CH(SO₃Et)₃ (I) in H₂O gives CBr(SO₃Et)₃ (II), needles, m. 60°-60.5°, and decomposing 110°. II liberates iodine from KI, but I does not.

L20 ANSWER 27 OF 37 CAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1951:59987 CAPLUS
 DOCUMENT NUMBER: 45:59987
 ORIGINAL REFERENCE NO.: 45:10190b-d
 TITLE: Ethyl methanethiosulfonate and its hydrolysis
 AUTHOR(S): Samén, Evald
 CORPORATE SOURCE: Univ. Uppsala, Swed.
 SOURCE: Arkiv för Kemi (1951), 3, 303-8
 CODEN: ARKHEAD; ISSN: 0365-6128
 DOCUMENT TYPE: Journal
 LANGUAGE: Unavailable
 IT 873390-12-6, Methanethiosulfonic acid, triethyl ester
 (and its hydrolysis)
 RN 873390-12-6 CAPLUS
 CN Methanethiosulfonic acid, triethyl ester (SCI) (CA INDEX NAME)



AB cf. C.A. 44, 1400d, 9339a. Gentle refluxing of 5.8 g. HC(SO₃Ag)₃ for 14 hr with 5 g. EtI in 30 ml. C₆H₆ yielded 2.4 g. nearly pure HC(SO₂OEt)₃ (I), fine needles, m. 75° (from C₆H₆-petr. ether). Br water added to I in H₂O causes an immediate white precipitate (II), which dissolves rapidly to a clear solution (III). Both II and III liberate iodine from KI. I in absolute EtOH reacts with Br immediately, less rapidly in Me₂CO, and slowly in glacial AcOH, the addition of water to the glacial AcOH causes a disappearance of the Br color. I in NaOH causes a slow decrease in the concentration of NaOH, the anion of HC(SO₂OH)₃ being unstable in alkali. A dilute alkaline solution of HC(SO₂OK)₃ uses up alkali and, after acidification the solution, reduces MnO₄⁻ with the probable production of SO₃²⁻. The 1st step in the hydrolysis of I was found to be catalyzed by H³⁰⁺. In water (no mineral acid), the bimol. constant = 0.316 l./moles-min. and in 0.050 N and 0.100 N HCl the pseudounimol. consts. = 0.0189 and 0.0336/min., resp. The hydrolysis measurements were carried out at 25° in a glass-stoppered flask and periodic samples were titrated with KBr and Br (Me orange) for the HCl catalyzed studies.

L20 ANSWER 28 OF 37 CAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1950:49172 CAPLUS
 DOCUMENT NUMBER: 44:49172
 ORIGINAL REFERENCE NO.: 44:9339a-b
 TITLE: Hydrolysis of methyl methanethiosulfonate
 AUTHOR(S): Samén, Evald
 CORPORATE SOURCE: Univ. of Uppsala, Swed.
 SOURCE: Acta Chemica Scandinavica (1950), 4, 397-8
 CODEN: ACHSE7; ISSN: 0904-213X
 DOCUMENT TYPE: Journal
 LANGUAGE: Unavailable
 IT 872793-71-0, Methanethiosulfonic acid, trimethyl ester
 (hydrolysis velocity of)
 RN 872793-71-0 CAPLUS
 CN Methanethiosulfonic acid, trimethyl ester (SCI) (CA INDEX NAME)

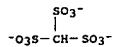


AB The hydrolysis of CH(SO₃Me)₃ (I) in aqueous HCl was studied by titration with Br and an azo indicator (methyl orange). (It was assumed that only unhydrolyzed triester absorbed Br.) The reaction was found to be pseudounimol. I was prepared from MeI and CH(SO₃Ag)₃.

L20 ANSWER 29 OF 37 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1950:28491 CAPLUS
 DOCUMENT NUMBER: 44:28491
 ORIGINAL REFERENCE NO.: 44:5552b-d
 TITLE: Aluminum methionate
 INVENTOR(S): Christian, John E.; Jenkins, Glenn L.
 PATENT ASSIGNEE(S): Purdue Research Foundation
 DOCUMENT TYPE: Patent
 LANGUAGE: Unavailable
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

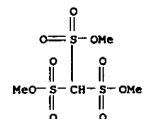
| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|--|----------|-----------------|----------|
| US 2504107 | | 19500418 | US 1946-701091 | 19461004 |
| IT 855840-41-4 | Methanetrisulfonic acid, aluminum salt (preparation of) | | | |
| RN 855840-41-4 | CAPLUS | | | |
| CN Methanetrisulfonic acid, aluminum salt (5CI) (CA INDEX NAME) | | | | |

● Al³⁺

AB Certain Al alkyl sulfonates are effective as antiperspirants, e.g. Al methionate (I), Al ethanesulfonate, Al methanetrisulfonate, Al methanesulfonate, Al soapsulfonate, Al o-sulfobenzoate. General requirements are: the Al ion or its equivalent; one or more sulfo groups; an alkyl group. The more sulfo groups, the greater is the astringency. I is prepared by adding a solution of Al₂(SO₄)₃ to a solution of Ca methionate in water, digesting the mixture for 10 min., and filtering it. The solution of I is concentrated, and EtOH is added until I crystallizes out. I is hygroscopic, soluble in water, does not crystallize out of astringent creams. The other Al salts are prepared by treating the respective Ba compds. with Al₂(SO₄)₃ solution. These antiperspirants are harmless to skin and fabrics.

L20 ANSWER 30 OF 37 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1950:7342 CAPLUS
 DOCUMENT NUMBER: 44:7342
 ORIGINAL REFERENCE NO.: 44:1400d-f
 TITLE: Methyl methanetrisulfonate
 AUTHOR(S): Samen, Evald
 SOURCE: Arkiv foer Kemi (1949), 1, 231-3
 CODEN: ARKED; ISSN: 0365-6128
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 IT 872793-71-0, Methanetrisulfonic acid, trimethyl ester
(preparation of)
 RN 872793-71-0 CAPLUS
 CN Methanetrisulfonic acid, trimethyl ester (5CI) (CA INDEX NAME)

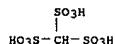


AB cf. C.A. 37, 5015.8. Tri-Me methanetrisulfonate (I) was prepared for the first time by refluxing 11.5 g. dry CH(SO₂OAg)₃ (cf. C.A. 25, 915) 8 hrs. with 9 g. MeI in 50 ml. C₆H₆; the filtrate from the precipitated AgI deposited 1.8 g. I which separated from boiling C₆H₆ in long fine needles, m. 110-11°. I possesses strong acid properties and is sparingly soluble in C₆H₆, Et₂O, and CHCl₃, but more soluble in H₂O. I (68.09 mg.) in 10 ml. boiling H₂O was hydrolyzed in 1 min.; a 0.01 M solution in H₂O was half hydrolyzed in 20 hrs. at room temperature I (0.6 g.) in 10 ml. H₂O at 0° reacted immediately with an equivalent amount of Br in cold H₂O, forming 0.4 g. C₄H₉O₉Br₅ (II), m. 140°. II liberated iodine from KI instantly and quantitatively. Br in AcOH reacted slowly with I in the same solvent. Addition of H₂O caused the Br color to vanish immediately.

L20 ANSWER 31 OF 37 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1949:27346 CAPLUS
 DOCUMENT NUMBER: 43:27346
 ORIGINAL REFERENCE NO.: 43:5035h-i
 TITLE: Reaction of acetylene and acetic acid. Societe des usines chimiques Rhone-Poulenc
 DOCUMENT TYPE: Patent
 LANGUAGE: Unavailable
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

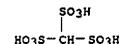
| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|--|----------|-----------------|----------|
| FR 867066 | | 19410926 | FR | 19400224 |
| IT 54322-33-7 | Methanetrisulfonic acid (catalyst of HgO, HgSO ₄ and, in C ₂ H ₂ reaction with AcOH) | | | |
| RN 54322-33-7 | CAPLUS | | | |
| CN Methanetrisulfonic acid (7CI, 9CI) (CA INDEX NAME) | | | | |



AB With a mixture of sulfonic acids containing CH-(SO₃H)₃ 36, HgSO₄ 21, and HgO 14 as catalyst, AcOH 5600 g., and C₂H₂ give CH₂COAc or MeCH(OAc)₂. The sulfonic acid mixture is prepared by adding 631 HgSO₄ 1070 to Ac₂O 400 g. slowly so that the temperature does not rise above 115°, letting stand 3 hrs. at 120°, adding glacial AcOH 500 g. with the temperature at 120° another 3 hrs., and then more glacial AcOH 3000 g., with stirring 0.5 hr. The mixture contains 15% CH-(SO₃H)₃.

L20 ANSWER 32 OF 37 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1947:11308 CAPLUS
 DOCUMENT NUMBER: 41:11308
 ORIGINAL REFERENCE NO.: 41:2303e-g
 TITLE: Diameter changes of gelatinized coacervate drops of the complex coacervate gelatin-gum arabic, resulting from a change in pH of, or from the addition of neutral salts to, the surrounding medium. I
 AUTHOR(S): de Jong, H. G. Bungenberg; Landsmeer, J. M. F.
 CORPORATE SOURCE: Univ., Leiden
 SOURCE: Recueil des Travaux Chimiques des Pays-Bas et de la Belgique (1946), 65, 606-13
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 IT 55110-91-3, Methanetrisulfonic acid, tripotassium salt
(effect on diameter changes of coacervate drops of gelatin-gum arabic)
 RN 55110-91-3 CAPLUS
 CN Methanetrisulfonic acid, tripotassium salt (3CI, 9CI) (CA INDEX NAME)

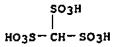


● 3 K

AB Diameter changes of coacervate drops (100-200 μ) reached equilibrium quickly (5-10 min.) in media of a given pH or salt concentration. The changes were followed microscopically at salt concns. low enough (10-40 milliequiv. per l.) to allow reversibility in the swelling and shrinking. The diameter is a min. at the pH (3.7) where the H₂O content is a min. Reversible swelling due to addition of a salt (KCl, CaCl₂, LaCl₃, K₂SO₄, or K₃CH(SO₃)₃) is least for the 1-1 valence type and increases as the salt deviates from this valence type (double valence rule).

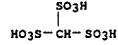
L20 ANSWER 33 OF 37 CAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1944:16250 CAPLUS
 DOCUMENT NUMBER: 38:16250
 ORIGINAL REFERENCE NO.: 38:2347f-g
 TITLE: Reaction of oleum with AcOH or Ac2O
 INVENTOR(S): Cockerille, Frank O.
 PATENT ASSIGNEE(S): E. I. du Pont de Nemours & Co.
 DOCUMENT TYPE: Patent
 LANGUAGE: Unavailable
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|----------|-----------------|----------|
| US 2333701 | | 19431109 | US 1940-365947 | 19401116 |
| IT 54322-33-7 | Methanetrisulfonic acid (preparation of) | | | |
| RN 54322-33-7 | CAPLUS | | | |
| CN Methanetrisulfonic acid (7CI, 9CI) (CA INDEX NAME) | | | | |



AB Methanetrisulfonic acid is prepared by a process involving adding HOAc or Ac2O to oleum, in a proportion of 4 to 7 parts of oleum to each part of the HOAc or Ac2O, the temperature being allowed to rise gradually to 65-85° during the addition of 50-75%, and not above 90° during the addition of the remainder, of the Ac2O or HOAc, and completing the reaction by holding the mixture at 90-100°.

L20 ANSWER 34 OF 37 CAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1932:23284 CAPLUS
 DOCUMENT NUMBER: 26:23284
 ORIGINAL REFERENCE NO.: 26:2413g-i,2414a-d
 TITLE: The chlorination of methanetrisulfonic acid
 AUTHOR(S): Backer, H. J.
 SOURCE: Recueil des Travaux Chimiques des Pays-Bas et de la Belgique (1932), 51, 374-80
 CODEN: RTCPB4; ISSN: 0370-7539
 DOCUMENT TYPE: Journal
 LANGUAGE: Unavailable
 IT 54322-33-7, Methanetrisulfonic acid
(chlorination of)
 RN 54322-33-7 CAPLUS
 CN Methanetrisulfonic acid (7CI, 9CI) (CA INDEX NAME)

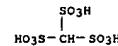


AB cf. C. A. 25, 75. The chlorination of CH(SO₃H)₃ may be carried out by heating 7.8 g. of the tri-K salt and 0.1 g. I in 60 cc. water containing 2 g. Cl in a sealed tube at 200° for 10 hrs. After evaporating the contents of the tube and recryst. the residue 6 times from its weight of water, tri-K chloromethanetrisulfonate was obtained in a pure state in 70% yield; it does not contain H₂O; at 25° 100 g. water dissolves 3.38 g.; crystallographic properties: monoclinic system; a:b:c = 0.7659; β = 87° 52'; observed forms: (hivin.111), (101), (111), (101) and (011); angles: (101):(011) = 52° 34'; (101):(011) = 61° 27'; (100):(hivin.101) = 42° 36'; (100):(101) = 44° 33'; (101):(hivin.111) = 60° 38'. For the preparation of the free acid and other salts the triarychnine salt, which crystallizes without H₂O, was used. The free acid (4.5 H₂O) m. 160-5° but 180-2° in the presence of P2O5; at 25°, 100 g. water dissolves 254.7 g. of the anhydrous acid. Normal Li salt (8 H₂O): 100 g. water dissolves 109.9 g. of the anhydrous salt; crystalline properties: rhombic system; a:b:c = 0.933:1:0.708; observed forms: (110), (011) and (010); angles: (110):(010) = 46° 59'; (1.hivin.111):(100) = 52° 43'; (010):(011) = 54° 50'; (110):(011) = 66° 51'. The normal Na salt does not contain H₂O on crystallization from a saturated hot solution but 3 H₂O on evaporating a solution at room temperature; at 25°, 100 g. water dissolves 21.8 g. of the trihydrate. Normal Rb salt (1H₂O): 100 g. water dissolves at 25°, 3.34 g. of the anhydrous salt; crystalline properties: rhombic system; a:b:c = 0.9827:1:0.5437; observed forms: (011), (010), (111), (221), (100), (041), (001) and (210), sometimes (110); angles: (001):(111) = 37° 48'; (100):(110) = 45° 30'; (001):(011) = 29° 1'; (001):-(221) = 57° 20'; (001):(041) = 65° 23'; (100):(210) = 26° 12'; (101):(111) = 25° 20'. The normal Cs salt (1 H₂O) consists of rhombic plates; at 25°, 100 g. water dissolves 5.49 g. of the crystallized salt; crystallographic properties: rhombic system; a:b:c = 0.9646:1:1.0845; observed forms: (100), (001), (010), (111), (102), (101), (210) and (112); angles: (100):(101) = 41° 39'; (100):(210) = 25° 45'; (100):(112) = 63° 47'; (100):(111) = 53° 0';

L20 ANSWER 34 OF 37 CAPLUS COPYRIGHT 2006 ACS on STN (Continued)
 a:b:c = 0.9573:1:1.7022; observed forms: (001), (011), (101), (110) and (211); angles: (001):-(011) = 59° 34'; (100):(101) = 29° 21'; (100):(110) = 43° 44'; (100):(211) = 29° 16'. PC15 with the free acid does not give the triasulfonyl chloride, SO₂ being evolved; therefore, derivs. could not be prep'd.

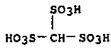
a:b:c = 0.9573:1:1.7022; observed forms: (001), (011), (101), (110) and (211); angles: (001):-(011) = 59° 34'; (100):(101) = 29° 21'; (100):(110) = 43° 44'; (100):(211) = 29° 16'. PC15 with the free acid does not give the triasulfonyl chloride, SO₂ being evolved; therefore, derivs. could not be prep'd.

L20 ANSWER 35 OF 37 CAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1932:8729 CAPLUS
 DOCUMENT NUMBER: 26:8729
 ORIGINAL REFERENCE NO.: 26:9629-g-i
 TITLE: The salts of methanetrisulfonic acid
 AUTHOR(S): Backer, H. J.; Terpstra, P.
 SOURCE: Recueil des Travaux Chimiques des Pays-Bas et de la Belgique (1931), 50, 1069-77
 CODEN: RTCPB4; ISSN: 0370-7539
 DOCUMENT TYPE: Journal
 LANGUAGE: Unavailable
 IT 54322-33-7, Methanetrisulfonic acid
(and salts)
 RN 54322-33-7 CAPLUS
 CN Methanetrisulfonic acid (7CI, 9CI) (CA INDEX NAME)



AB The normal K, Ag and Tl salts of methane-trisulfonic acid have been described (cf. Backer, C. A. 25, 915); the present paper deals with other salts, which were prepared in the usual way. Methanetrisulfonic acid contains 3H₂O, m. 162-162.5°; 100 g. of water at 25° dissolves 221 g. of the anhydrous acid and 510 g. of the crystallized compound. Detailed crystallographic data are given for the normal NH₄ salt (contains 0.5 H₂O; crystals are of the monoclinic system), the normal Li salt (4 H₂O; monoclinic system), normal Na salt (3 H₂O; very thin monoclinic plates), normal Rb salt (1 H₂O; rhombic system, bisphenoidal class), normal Cs salt (1 H₂O; monoclinic system), normal Ag salt (1 H₂O; triclinic system), normal Ca salt (12 H₂O; rhombic system), normal Ba salt (9 H₂O; monoclinic crystals), normal Lu salt (6 H₂O; monoclinic crystals), and normal cinchonine salt (8 H₂O; rhombic, pseudotetragonal crystals). The mono-K dibrucine salt was obtained from the tri-K salt and an equivalent amount of brucine acetate; it contains 9 H₂O. The K and Rb salts are isomorphous and give mixed crystals. Sometimes small anhydrous triclinic crystals of the Cs salt were obtained and a triclinic dihydrate was prepared

L20 ANSWER 36 OF 37 CAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1931:8598 CAPLUS
 DOCUMENT NUMBER: 25:8598
 ORIGINAL REFERENCE NO.: 25:915a-1
 TITLE: Methanetrisulfonic acid
 AUTHOR(S): Becker, H. J.; Klaassens, K. H.
 SOURCE: Recueil des Travaux Chimiques des Pays-Bas et de la Belgique (1931), 49, 1107-17
 CODEN: RTCPB4; ISSN: 0370-7539
 DOCUMENT TYPE: Journal
 LANGUAGE: Unavailable
 IT 54322-33-7, Methanetrisulfonic acid
 (and salts)
 RN 54322-33-7 CAPLUS
 CN Methanetrisulfonic acid (7CI, 9CI) (CA INDEX NAME)



AB CH(SO₃H)₃ has already been prepared: (1) by Theilkkuhl (Ann. 147, 134 (1868)) on heating Ca Me sulfate with H₂S₂O₇; (2) by Bagnall (J. Chemical Society 75, 278 (1899)) on sulfonating Ac derivs. of aromatic amines; (3) by oxidation of HSC(SO₃H)₃ (Albrecht, Ann. 161, 139 (1872); cf. Becker, C. A. 24, 76); (4) by the action of K₂SO₃ on O₂NCH(SO₃H)₂ (Rathke, Ann. 167, 219 (1873)), which is formed by the action of K₂SO₃ of O₂NCl₃; it is, however, to be recommended to isolate the O₂NCH(SO₃H)₂, which is formed as an intermediate product; (5) on heating N₂C(SO₃H)₂ with acids, water or

KHSO₃ (von Pechmann, Ber. 28, 2382 (1895); Fanti and Fisch, C. A. 24, 1841); (6) by sulfonation of CH₂(SO₃H)₂. All these methods, except 1, are discussed in the present paper. Method 6: On heating CH₂(SO₃H)₂ with SO₃ (2.5 mols.) during 5 hrs. at 170°, CH(SO₃H)₃ may be obtained as the K salt with 10% yield. Method 2: sulfonation of PhNH₂ 0.5 mol. with HNO₂ is introduced slowly into 600 g. fuming H₂SO₄ containing 35% SO₃, the mixture being

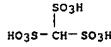
heated 3 hrs. at 130° with mech. stirring; yield of the tri-K salt 57%; on carrying out the same reaction with succinimidile, a small yield of the same compound was obtained. Method 3: 0.1 mol. HSC(SO₃K)₃, in 1

1. water is oxidized at room temperature by a current of Cl with the gradual addition

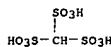
of 80 g. KHCO₃; yield 90%. Method 4: O₂NCH(SO₃H)₂ was prepared according to Rathke (loc. cit.) by adding 82 g. O₂NCl₃, gradually to 450 g. K₂SO₃ in 900 cc. water, heated to 75°, and keeping the temperature at 80°; yield 40% of the anhydrous di-K salt, which dissolves in water at 25° to the extent of 1.16%. The normal strychnine salt of O₂NCH(SO₃H)₂ crystallizes with 3.5 H₂O, the free acid itself with 2 H₂O while the normal Na and Tl salts crystallize without H₂O; both the latter salts are easily soluble in water. On heating the K salt with K₂SO₃ in a sealed

tube at 140°, CH(SO₃H)₃ is obtained in 67% yield. Method 5: N₂C(SO₃K)₂, prepared according to von Pechmann (loc. cit.), may be converted into CH(SO₃H)₃ by the action of KHSO₃ at 60° and finally on the water bath (yield 62%), decomposing the compound with water or introducing it into dilute

L20 ANSWER 37 OF 37 CAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1930:16847 CAPLUS
 DOCUMENT NUMBER: 24:16847
 ORIGINAL REFERENCE NO.: 24:1841a-b
 TITLE: Methanoltrisulfonic acid
 AUTHOR(S): Fanti, Paul; Fisch, Julius
 SOURCE: Journal fuer Praktische Chemie (Leipzig) (1930), 124, 159-62
 CODEN: JPCEAO; ISSN: 0021-8383
 DOCUMENT TYPE: Journal
 LANGUAGE: Unavailable
 IT 55110-91-3, Methanetrisulfonic acid, hydroxy-, tripotassium salt
 (preparation of)
 RN 55110-91-3 CAPLUS
 CN Methanetrisulfonic acid, tripotassium salt (3CI, 9CI) (CA INDEX NAME)



IT 54322-33-7, Methanetrisulfonic acid
 (salts)
 RN 54322-33-7 CAPLUS
 CN Methanetrisulfonic acid (7CI, 9CI) (CA INDEX NAME)



AB N₂C(SO₃K)₂ and KHSO₃ give CH(SO₃K)₃ and not HO(SO₃K)₃ (cf. V. Pechmann, Ber. 28, 2374 (1898)). The K, Ba and Ag salts were prepared and analyzed.

L20 ANSWER 36 OF 37 CAPLUS COPYRIGHT 2006 ACS on STN (Continued)
 HCl, the latter reaction giving a 40% yield. On introducing the diazo compd. into concd. HCl at 0°, ClCH(SO₃H)₂ is obtained. The following salts of CH(SO₃H)₃ and the acid itself were prep'd. in the usual way: the free acid with 3.5 H₂O, m. 156°; the tri-K salt, rhombic prisms with 1 H₂O; 100g. of water dissolve at 25°, 1.202 g. of the anhyd. salt and 1.261 g. of the crystd. salt. Crystallographic properties

(P. TERPSTRA): rhombic system, bisphenoidal class D2; a: b: c = 0.9977:1:1.3604. Forms: a = (100); b = (010); c = (001); p = (101); m = (110); o = (111); Q = (1.hivin.11); q = (011); s = (121); angles: a: m = 44° 56'; c:p = 52° 38'; a: * = 51° 28'; b: o = 51° 34'; c: q = 52° 36'; o: s = 19° 22'. The crystals obtained by evapn. at ordinary temp. have a larger dimension in the direction of the b-axis. The crystals show a marked piezoelectricity; the plane of the optical axes is (001); the a-axis is the sharp bissectrix; p<v. For Na light 2α 83° 1'; a = 1.513; B = 1.5253; γ = 1.5270; 2v = 51° 45'. The tri-Tl salt also contains 1H₂O; crystallographic properties (P. TERPSTRA): rhombic system, bisphenoidal class: a: b: c: = 0.9971:1:-1.3009; forms: m = (110); p = (101); q = (011); s = (1.hivin.11); * = (111); the crystals possess either the form s or the form *, which have never been found to occur in the same crystal. Angles: m: m = 90° 10'; p:p = 105° 4'; q:q = 104° 54'; o: o = 123° 0'; p:s = 38° 20'; m:q = 38° 29'. The plane of the optical axes is (001); the sharp bissectrix (010). By means of a prism formed by (1.hivin.11) and (1.hivin.11) the refractive index B has been detd. to be 1.739, 1.743, 1.768 for λ = 578, 546, 436, resp. The crystals are piezoelectrical. The tri-Ag salt contains 1 H₂O; the Ba salt, 9 H₂O; the latter is difficultly sol. in water, only to the extent of 0.1%. On mixing without precautions the solns. of the K salt and BaCl₂, a double salt of Ba and K is obtained, CHO₉S₃KBa.3H₂O, which, after

several recrystn's. from a large amount of water, gives the pure Ba salt. The Ca salt contains 12 H₂O and the La salt 6 H₂O (cf. Backer and Klaassens, C. A. 24, 4729).

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 1 2 3 4 5
 chain bonds :
 1-4 2-4 3-4 4-5
 exact bonds :
 1-4 2-4 3-4 4-5

Match level :
 1:CLASS 2:CLASS 3:CLASS 4:CLASS 5:CLASS

L21 STRUCTURE UPLOADED

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L23 ANSWER 1 OF 30 CAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 2005:426557 CAPLUS
 DOCUMENT NUMBER: 142:463900
 TITLE: Acylation process for the preparation of 2,3,5-trimethylhydroquinone diacylates in the presence
 of methanethisulfonic acid catalyst
 INVENTOR(S): Aquino, Fabrice; Bonrath, Werner; Pace, Francesco
 PATENT ASSIGNEE(S): DSM IP Assets B.V., Neth.
 SOURCE: PCT Int. Appl., 10 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|--|------|----------|-----------------|------------|
| WO 2005044775 | A1 | 20050519 | WO 2004-EP12058 | 20041026 |
| W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW | | | | |
| RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, C2, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG | | | | |
| EP 1600392 | A1 | 20060719 | EP 2004-790843 | 20041026 |
| R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, FI, RO, CY, TR, BG, CZ, EE, HU, PL, SK | | | | |
| PRIORITY APPLN. INFO.: EP 2003-25513 | A | 20031107 | | |
| | | | WO 2004-EP12058 | W 20041026 |

OTHER SOURCE(S): CASREACT 142:463900
 IT 54322-33-7, Methanethisulfonic acid
 RL: CAT (Catalyst Use); USES (Uses)
 (acylation process for preparation of 2,3,5-trimethylhydroquinone
 diacylates
 in presence of methanethisulfonic acid catalyst)
 RN 54322-33-7 CAPLUS
 CN Methanethisulfonic acid (7CI, 9CI) (CA INDEX NAME)

SO₃H
 HO₃S—CH—SO₃H

AB 2,3,5-Trimethyl-1,4-hydroquinone diacylates (e.g., 2,3,5-trimethyl-1,4-benzoquinone diacetate), useful as intermediates in the preparation of α -tocopherol (no data), are obtained in high yield and selectivity by reacting 3,5,5-trimethyl-1,4-benzoquinone with an acylating agent (e.g., acetic anhydride) in the presence of catalytic quantities of methanethisulfonic acid.
 REFERENCE COUNT: 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE

FORMAT

L23 ANSWER 2 OF 30 CAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 2004:965239 CAPLUS
 DOCUMENT NUMBER: 141:395687
 TITLE: Process for the manufacture of tocyl and tocopheryl acylates
 INVENTOR(S): Bonrath, Werner; Haas, Alois; Hoppmann, Simone;
 Netzher, Thomas; Pauling, Horst
 PATENT ASSIGNEE(S): DSM IP Assets B.V., Neth.
 SOURCE: PCT Int. Appl., 15 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|------|----------|-----------------|----------|
| WO 2004096790 | A1 | 20041111 | WO 2004-EP144 | 20040419 |
| W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG | | | | |
| PRIORITY APPLN. INFO.: EP 2003-9522 | A | 20030428 | | |

OTHER SOURCE(S): CASREACT 141:395687; MARPAT 141:395687
 IT 54322-33-7, Methanethisulfonic acid
 RL: CAT (Catalyst Use); USES (Uses)
 (process for manufacture of tocyl and tocopherol acylates using perfluoroalkylsulfonyl catalysts)
 RN 54322-33-7 CAPLUS
 CN Methanethisulfonic acid (7CI, 9CI) (CA INDEX NAME)

SO₃H
 HO₃S—CH—SO₃H

GI

Chemical structure I: A substituted benzene ring with substituents R⁵, R⁶, R⁷, and R⁸. The ring is connected to a cyclohexane ring via a methylene group. The cyclohexane ring is substituted with four methyl groups (Me).

AB A process for the manufacture of tocyl acylate I [R = acyl; R¹ = R² = R³ = H]

L23 ANSWER 2 OF 30 CAPLUS COPYRIGHT 2006 ACS on STN (Continued)

L23 ANSWER 2 OF 30 CAPLUS COPYRIGHT 2006 ACS on STN (Continued)
 or a tocopheryl acylate I [R = acyl; R⁵ = R⁷ = Me, R⁵ = H, R⁷ = R⁸ = Me, etc.] comprised reacting a corresponding tocotrienol or tocopherol with an acylating agent in the presence of a catalyst of the general formula HCR₁R₂R₃ [wherein R₁, R₂ and R₃ each signify the sulfo group, or R₁, R₂ and R₃ each signify a perfluoroalkylsulfonyl group whereby at least two of R₁, R₂ and R₃ are identical such perfluoroalkyl-sulfonyl groups, or R₁ signifies the pentafluorophenyl-sulfonyl group and R₂ and R₃ each signify an identical perfluoroalkylsulfonyl group]. The main com. form of vitamin E, being (all-rac)- α -tocopheryl acetate I (R = acetyl; R⁵ = R⁷ = R⁸ = Me), can be manufd. by acylation of (all-rac)- α -tocopherol according to this process.

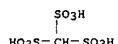
REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE

FORMAT

L23 ANSWER 3 OF 30 CAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 2004:823008 CAPLUS
 DOCUMENT NUMBER: 141:334863
 TITLE: Crosslinked polyoxyalkylene-polysiloxanes for use as nonaqueous salt-type electrolytes for lithium secondary batteries
 INVENTOR(S): Barrandon, Georges; George, Catherine; Vergelati, Carol; Giraud, Yves
 PATENT ASSIGNEE(S): Rhodia Chimie, Fr.
 SOURCE: Fr. Demande, 25 pp.
 CODEN: FRXXBL
 DOCUMENT TYPE: Patent
 LANGUAGE: French
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|------|----------|------------------|------------|
| FR 2853321 | A1 | 20041008 | FR 2003-4153 | 20030403 |
| FR 2853321 | B1 | 20050506 | | |
| WO 2004090037 | A1 | 20041021 | WO 2004-FR708 | 20040323 |
| W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, US, UZ, VC, VN, YU, ZA, ZM, ZW RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG | | | | |
| EP 1608705 | A1 | 20051228 | EP 2004-742318 | 20040323 |
| R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, PL, SK | | | | |
| CN 1788054 | A | 20060614 | CN 2004-80013072 | 20040323 |
| PRIORITY APPLN. INFO.: | | | FR 2003-4153 | A 20030403 |
| | | | WO 2004-FR708 | W 20040323 |

OTHER SOURCE(S): MARPAT 141:334863
 IT 54322-33-7DP. Methanetrisulfonic acid, derivs., salts
 RL: DEV (Device component use); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (battery electrolytes containing: crosslinked polyoxyalkylene-polysiloxanes for use as nonaq. salt-type electrolytes for lithium secondary batteries)
 RN 54322-33-7 CAPLUS
 CN Methanetrisulfonic acid (7CI, 9CI) (CA INDEX NAME)



AB Crosslinked polymeric electrolytes for lithium secondary batteries consist of: (1) a first poly(hydrogen organic siloxane) with ≥ 2 Si-H bonds per mol., (2) a second polysiloxane containing ≥ 2 Si-OH bonds per mol., (3)

L23 ANSWER 4 OF 30 CAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 2004:823007 CAPLUS
 DOCUMENT NUMBER: 141:334862
 TITLE: Photocatalyzed crosslinked epoxy-polyoxyalkylene-polysiloxanes for use as nonaqueous salt-type electrolytes for lithium secondary batteries
 INVENTOR(S): Gambut, Lucile; Vergelati, Carol; Sanchez, Jean Yves;
 Alloin, Fannie
 PATENT ASSIGNEE(S): Rhodia Chimie, Fr.; Rhone Poulen Chimie
 SOURCE: Fr. Demande, 30 pp.
 CODEN: FRXXBL
 DOCUMENT TYPE: Patent
 LANGUAGE: French
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|------|----------|------------------|------------|
| FR 2853320 | A1 | 20041008 | FR 2003-4150 | 20030403 |
| FR 2853320 | B1 | 20050506 | | |
| WO 2004091033 | A2 | 20041021 | WO 2004-FR707 | 20040323 |
| WO 2004091033 | A3 | 20050714 | | |
| W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, US, UZ, VC, VN, YU, ZA, ZM, ZW RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG | | | | |
| EP 1609205 | A2 | 20051228 | EP 2004-742317 | 20040323 |
| R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, PL, SK | | | | |
| CN 1784806 | A | 20060607 | CN 2004-80012563 | 20040323 |
| PRIORITY APPLN. INFO.: | | | FR 2003-4150 | A 20030403 |
| | | | WO 2004-FR707 | W 20040323 |

OTHER SOURCE(S): MARPAT 141:334862
 IT 54322-33-7DP. Methanetrisulfonic acid, derivs., salts
 RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (battery electrolytes containing: photocatalyzed crosslinked epoxy-polyoxyalkylene-polysiloxanes for use as nonaq. salt-type electrolytes for lithium secondary batteries)
 RN 54322-33-7 CAPLUS
 CN Methanetrisulfonic acid (7CI, 9CI) (CA INDEX NAME)

AB Crosslinked polymeric electrolytes for lithium secondary batteries are prepared from a polyorganosiloxane grafted with polyoxyalkylene and epoxy functions, followed by radiochem. or photochem. (e.g., UV-induced)

L23 ANSWER 3 OF 30 CAPLUS COPYRIGHT 2006 ACS on STN (Continued)
 a dehydrogenation-condensation catalyst, and (4) ≥ 1 salt electrolyte. The polyoxyalkylene ether functions are derived from polyoxyethylene, polyoxypropylene, or their mono-Me ethers. The dehydrogenation-condensation catalysts are typically metal complexes based on Pt, B, Rh, Pd, Sn, or Ir, preferably Karstedt (hydrosilylation) catalysts of formula $\text{IrCl}(\text{C}_2\text{H}_5)_2$. Suitable salt electrolytes include LiClO_4 , LiBF_4 , LiAsF_6 , $\text{CF}_3\text{SO}_3\text{Li}$, $\text{LiN}(\text{CF}_3\text{SO}_2)_2$, and $\text{LiN}(\text{C}_2\text{F}_5\text{SO}_2)_2$ in a non-aq. electrolyte solvent, as well as other cations (e.g., transition metal cations, selected from Mn, Fe, Co, Ni, Cu, Zn, Ca, and Ag). Addnl. ions include ammonium, amidinium, guanidinium cations, halides, ClO_4^- , SCN^- , BF_4^- , NO_3^- , AsF_6^- , PF_6^- , RSO_3^- (R = stearyl, CF_3 , octyl, dodecylphenyl, and $\text{C}_1\text{-6-perfluoroalkyl}$ and -perfluoroaryl), $(\text{RSO}_2)_2$ (R = $\text{C}_1\text{-6-perfluoroalkyl}$ and -perfluoroaryl).

REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L23 ANSWER 4 OF 30 CAPLUS COPYRIGHT 2006 ACS on STN (Continued)
 crosslinking in the presence of a photosensitizer. The crosslinked epoxy-polyoxyalkylene-polysiloxanes have the general formula $\text{R}_1\text{xR}_2\text{yR}_3\text{zSiO}(4-x-z)/2$, in which R_1 -3 are $\text{C}_1\text{-12-alkyl}$, $\text{C}_5\text{-10-cycloalkyl}$, $\text{C}_6\text{-18-aryl}$, aralkyl, or $-\text{OR}_4$ (R_4 = H or $\text{C}_1\text{-5-alkyl}$; and $x + y + z = 1-3$). The product polysiloxanes (typically prepnd. from Si-H bond-contg. polysiloxanes by hydrosilylation grafting with allyl-terminated polyoxyalkylenes and epoxides) are then combined with org. salts to form the battery electrolytes. Suitable salt electrolytes include LiClO_4 , LiBF_4 , LiAsF_6 , $\text{CF}_3\text{SO}_3\text{Li}$, $\text{LiN}(\text{CF}_3\text{SO}_2)_2$, and $\text{LiN}(\text{C}_2\text{F}_5\text{SO}_2)_2$, other cations (e.g., transition metal cations); ammonium, amidinium, and guanidinium salts; org. sulfonates, imidodisulfonates, methanetrisulfonates, organoboron complex salts, ferricenium salts, and other onium salts (esp. iodonium and sulfonium compds.).

REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L23 ANSWER 5 OF 30 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2004:453200 CAPLUS

DOCUMENT NUMBER: 141:23750

TITLE: Manufacture of α -tocopherol from the reaction of trimethylhydroquinone with isophytol or phytol in the presence of methane trisulfonate

INVENTOR(S): Bonrath, Werner; Hoppmann, Simone; Haas, Alois;

Netscher, Thomas; Pauling, Horst

PATENT ASSIGNEE(S): DSM IP Assets B.V., Neth.

SOURCE: PCT Int. Appl., 13 pp.

CODEN: PIXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|------|----------|-----------------|------------|
| WO 2004046127 | A1 | 20040603 | WO 2003-EPI0837 | 20030930 |
| W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW | | | | |
| RW: GH, GM, KE, LS, MM, MZ, SD, SL, SZ, T2, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, ME, NE, SN, TD, TG | | | | |
| AU 2003270295 | A1 | 20040615 | AU 2003-270295 | 20030930 |
| CH 1701065 | A | 20051123 | CN 2003-825314 | 20030930 |
| US 2006020139 | A1 | 20060126 | US 2005-535603 | 20050519 |
| | | | EP 2002-25990 | A 20021121 |
| | | | WO 2003-EPI0837 | W 20030930 |

PRIORITY APPLN. INFO.:

OTHER SOURCE(S): CASREACT 141:23750

IT 54322-33-7, Methanetrisulfonic acid

RL: CAT (Catalyst use); USES (Uses)

(manufacture of α -tocopherol from the reaction of trimethylhydroquinone with isophytol or phytol in the presence of methane trisulfonate)

RN 54322-33-7 CAPLUS

CN Methanetrisulfonic acid (7CI, 9CI) (CA INDEX NAME)

SO₃H

|

HO₃S—CH—SO₃H

AB (all-rac)- α -tocopherol is prepared by the acid-catalyzed reaction of trimethylhydroquinone with isophytol or phytol in the presence of methane trisulfonate as the catalyst in an organic solvent.

L23 ANSWER 6 OF 30 CAPLUS COPYRIGHT 2006 ACS on STN

(Continued)

SO₃H

|

HO₃S—CH—SO₃H

●3/2 Ba

RN 187610-57-7 CAPLUS

CN Methanetrisulfonic acid, triisilver(1+) salt (9CI) (CA INDEX NAME)

SO₃H

|

HO₃S—CH—SO₃H

●3 Ag(I)

AB The acidity of alkanepolsulfonic acids was measured using the correlation between the 29Si-NMR shift of the corresponding Me₃Si ester of an acid and the pK_a of the acid. The alkanepolsulfonates RCH(SO₃SiMe₃)₂, R₂C(SO₃SiMe₃)₂, RC(SO₃SiMe₃)₃, and Me₃SiO₃S(CR₁₂)nSO₃SiMe₃ (R = H, F, Cl, Br, I; R₁ = H, F; n = 1-5) were prepared and studied.



L23 ANSWER 6 OF 30 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1997:69364 CAPLUS

DOCUMENT NUMBER: 126:211808

TITLE: Investigations on the acid-strength of alkanepolsulfonic acids

AUTHOR(S): Jueschke, Ralf; Sartori, Peter

CORPORATE SOURCE: Fachbereich 6 Anorganische Chem., Gerhard-Mercator Univ., Duisburg, D-47048, Germany

SOURCE: Zeitschrift fuer Naturforschung, B: Chemical Sciences (1996), 51(12), 1691-1700

CODEN: ZNBSBN; ISSN: 0932-0776

PUBLISHER: Verlag der Zeitschrift fuer Naturforschung

DOCUMENT TYPE: Journal

LANGUAGE: German

IT 54322-33-7, Methanetrisulfonic acid

RL: PRP (Properties)
(preparation of silyl alkanepolsulfonates and estimation of acidity)

by correlation with 29Si-NMR shift)

RN 54322-33-7 CAPLUS

CN Methanetrisulfonic acid (7CI, 9CI) (CA INDEX NAME)

SO₃H
|
HO₃S—CH—SO₃H

IT 55110-91-3

RL: RCT (Reactant); RACT (Reactant or reagent)

(preparation of silyl alkanepolsulfonates and estimation of acidity)

by correlation with 29Si-NMR shift)

RN 55110-91-3 CAPLUS

CN Methanetrisulfonic acid, tripotassium salt (3CI, 9CI) (CA INDEX NAME)

SO₃H
|
HO₃S—CH—SO₃H

●3 K

IT 75533-77-6P 187610-57-7P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(preparation of silyl alkanepolsulfonates and estimation of acidity)

by correlation with 29Si-NMR shift)

RN 75533-77-6 CAPLUS

CN Methanetrisulfonic acid, barium salt (2:3) (9CI) (CA INDEX NAME)

L23 ANSWER 7 OF 30 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1994:630311 CAPLUS

DOCUMENT NUMBER: 121:230311

TITLE: Improvement of the synthesis of the tripotassium methanetrisulfonate monohydrate

AUTHOR(S): Sartori, Peter; Jueschke, Ralf

CORPORATE SOURCE: Fachbereich 6 Anorg. Chem., Univ.-CH, Duisburg,

Germany

SOURCE: Journal fuer Praktische Chemie/Chemiker-Zeitung (1994), 336(4), 373-4

CODEN: JPCCEM; ISSN: 0941-1216

DOCUMENT TYPE: Journal

LANGUAGE: German

OTHER SOURCE(S): CASREACT 121:230311

IT 54322-33-7, Methanetrisulfonic acid

RL: FMU (Formation, unclassified); RCT (Reactant); FORM (Formation, nonpreparative); RACT (Reactant or reagent)

(improvement of the synthesis of the tripotassium methanetrisulfonate monohydrate)

RN 54322-33-7 CAPLUS

CN Methanetrisulfonic acid (7CI, 9CI) (CA INDEX NAME)

SO₃H
|
HO₃S—CH—SO₃H

IT 73224-87-0P

RL: SPN (Synthetic preparation); PREP (Preparation)

(improvement of the synthesis of the tripotassium methanetrisulfonate monohydrate)

RN 73224-87-0 CAPLUS

CN Methanetrisulfonic acid, tripotassium salt, monohydrate (9CI) (CA INDEX NAME)

SO₃H
|
HO₃S—CH—SO₃H

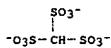
●3 K

● H₂O

AB The Bagnall-Backer method for the preparation of the title compound [via decarboxylation of acetonilide in SO₃/H₂SO₄ to give (HO₃S)2C₆H₃NNH₂ and HC(SO₃H)₃ (I) then CaO and K₂CO₃ to give HC(SO₃K)₃·H₂O (II)] is improved by the decarboxylation of acetone in SO₃/H₂SO₄ to give I which with KOH gives 49% II.

L23 ANSWER 8 OF 30 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1989:573247 CAPLUS
DOCUMENT NUMBER: 111:173247
TITLE: The duodecet rule. Part 2. C-H hydrogen bonding by sulfonyl compounds
AUTHOR(S): Robinson, E. A.
CORPORATE SOURCE: Erindale Coll., Univ. Toronto, Mississauga, ON, L5L 1C6, Can.
SOURCE: THEOCHEM (1989), 55, 29-41
CODEN: THEODJ; ISSN: 0166-1280
DOCUMENT TYPE: Journal
LANGUAGE: English
IT 123177-61-7
RL: PRP (Properties)
total bond orders at sulfur in
RN 123177-61-7 CAPLUS
CN Methanetrisulfonic acid, ion(3-) (9CI) (CA INDEX NAME)

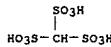


AB By combining linear relationships between log k and log r, bond order (n) and force consts. (K) where k is the CS stretching force constant of a bond of length r, a correlation is established between CS bond lengths and simple valence-bond bond orders. For a variety of S(VI) species with bonds to electroneg. ligands, including Me groups, this is used to demonstrate that the total bond order at S in these species is six, consistent with a duodecet rule. Apparently, S-CH₃ groups in compds. such as CH₃SO₂F, CH₃SO₂OH, Me₂SO₂, and related species compete with other ligands for the delocalization of electron pairs into the valence shell of the central sulfur atom, in this case through hyperconjugation. This accounts for the enhanced acidities of hydrogen atoms bonded to α -carbon atoms in such compds., and their ability to form hydrogen bonds. Evidence for hydrogen bonding in CH₃SO₂F, CH₃SO₂Cl, and (CH₃)₂SO₂, and in CH₃SO₂OH (via both S-OH and S-CH₃), is discussed. The use of C-H bond lengths and stretching force consts. as a possible diagnostic tool to select mol. capable of CH hydrogen bonding is also discussed.



L23 ANSWER 10 OF 30 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1986:431749 CAPLUS
DOCUMENT NUMBER: 105:31749
TITLE: The electrochemistry of a dimeric and two monomeric cis-trioxomolybdenum(VI) complexes containing cyclic triamine ligands in protic and aprotic media: model compounds for the active site in formate dehydrogenase
AUTHOR(S): Herrmann, Willy; Wieghardt, Karl
CORPORATE SOURCE: Ruhr-Univ., Bochum, D-4630, Fed. Rep. Ger.
SOURCE: Polyhedron (1986), 5(1-2), 513-20
CODEN: PLYHDE; ISSN: 0277-5387
DOCUMENT TYPE: Journal
LANGUAGE: English
IT 54322-33-7
RL: PRP (Properties)
(electrochem. reduction of molybdenum trioxotriazacyclonane or molybdenum trioxotrimethyltriazaacyclonane nuclear and dinuclear complexes on mercury in)
RN 54322-33-7 CAPLUS
CN Methanetrisulfonic acid (7CI, 9CI) (CA INDEX NAME)



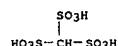
AB The electrochem. of cis-MoO₃L (I), (L = N,N',N''-trimethyl-1,4,7-triazacyclonane) or cis-MoO₃L' (II), (L' = 1,4,7-triazacyclonane) was in protic (CH₃SO₃H) and aprotic media (DMF) by cyclic voltammetry at the hanging Hg drop (HMD) electrode. I and II are quasi-reversibly reduced by a 2e-, 4H⁺ step in acidic solns. to give monomeric [Mo(IV)(OH₂)₂]²⁺ and [L'Mo(OH₂)₂]²⁺, which in the case of I is further reduced to a monomeric Mo(III) species which then undergoes a reversible chemical reaction (dimerization). In contrast, reduced II undergoes chemical reactions (dimerization or trimerization of [L'Mo(OH₂)₂]²⁺ or disproportionation reaction) due to the fact that the unmethylated cyclic amine in II is sterically less demanding. I and II are redox-inactive in DMF (+1.0 to -1.7 V vs Ag-AgCl at a Pt on a glassy C electrode). Dimeric [L₂Mo₂O₉] (III) is reversibly reduced to a Mo(V) dimer (2e-, 2H⁺ process) and, finally, to a Mo(IV)₂ dimer (4e-, 4H⁺) in 0.1M CH₃SO₃H at an HMD electrode, contrasting with the behavior in aprotic medium (DMF), a Pt electrode, where 2 reversible 1-electron transfer processes generating the blue, mixed-valence species Mo(VI)/(V) and an Mo(V)2 dimer were observed

L23 ANSWER 9 OF 30 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1989:553222 CAPLUS
DOCUMENT NUMBER: 111:153222
TITLE: Process for the preparation of alkyl 3-alkoxypropionates
INVENTOR(S): Jones, Glenn C.; Nottingham, William D.; Reynolds, Peter W.
PATENT ASSIGNEE(S): Eastman Kodak Co., USA
SOURCE: U.S., 4 pp.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|--|----------------------|--|---|--|
| US 4827021 | A | 19890502 | US 1988-164663 | 19880307 |
| CA 1326242 | A1 | 19940118 | CA 1989-591956 | 19890224 |
| WO 8908636 | A1 | 19890921 | WO 1989-US763 | 19890227 |
| W: AU, JP, KR RW: AT, BE, CH, DE, FR, GB, IT, LU, NL, SE AU 8933504 AU 609288 EP 403528 EP 403528 | A1 B2 A1 B1 | 19891005 19910426 19901227 19930210 | AU 1989-33504 JP 1989-503132 JP 2738967 AT 85603 KR 9700138 | 19890227 19890227 19890227 19891106 |
| PRIORITY APPLN. INFO.: | | | EP 1989-903301 | A 19890227 |
| | | | WO 1989-US763 | A 19890227 |

OTHER SOURCE(S): MARPAT 111:153222
IT 54322-33-7, Methanetrisulfonic acid
RL: CAT (Catalyst use); USES (Uses)
(catalyst, for addition of alkoxymethane with ketene)
RN 54322-33-7 CAPLUS
CN Methanetrisulfonic acid (7CI, 9CI) (CA INDEX NAME)



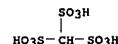
AB RIOCH2CR3R4CO₂R₂ (I; R₁, R₂ = C₁₋₈ alkyl; R₃, R₄ = H, alkyl, aryl), useful as solvents in the formation of coating compns., are prepared by addition of RIOCH₂R₂ with R₃R₄C:CO in the presence of CH₂(SO₃H)₂, CH(SO₃H)₃, or mixture thereof. A mixture of 23.0 g CH₂(OMe)₂, 0.071 CH₂(SO₃H)₂, and 0.30 and CH₂:CO was stirred at 25-40° under N to give 24.9 g I (R₁ = R₂ = Me, R₃ = R₄ = H). Similarly prepared was I (R₁ = R₂ = Et, R₃ = R₄ = H).

L23 ANSWER 11 OF 30 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1985:184717 CAPLUS
DOCUMENT NUMBER: 102:184717
TITLE: Alkoxylation of alcohols and phenols
INVENTOR(S): Moody, Keith
PATENT ASSIGNEE(S): ICI Australia Ltd., Australia
SOURCE: Pat. Specif. (Aust.), 15 pp.
CODEN: ALIXXP
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------------------|------|----------|-----------------|----------|
| AU 538363 | B2 | 19840809 | AU 1981-71460 | 19800613 |
| AU 8171460 | A1 | 19811217 | AU 1981-71460 | 19800613 |
| PRIORITY APPLN. INFO.: | | | AU 1981-71460 | 19800613 |

IT 54322-33-7
RL: CAT (Catalyst use); USES (Uses)
(catalyst, for alkoxylation of alcs. and phenols)
RN 54322-33-7 CAPLUS
CN Methanetriulfonic acid (7CI, 9CI) (CA INDEX NAME)

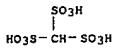


AB Alcs. and phenols were alkoxylated with alkylene oxides in the presence of catalysts consisting of organic sulfonic acids or their salts. The sulfonic acids chosen have an acid strength greater than that of methanesulfonic acid; the cations are chosen from first row transition metals, Be, Mg, Ca, B, Al, Sn, or Zr. Thus, BuOH was ethoxylated with ethylene oxide (6:1 mol ratio) at 160° in the presence of Zn methanesulfonate to give 93.8% ethylene glycol monobutyl ether and small amts. of diethylene glycol monobutyl ether (20.9:1 mol ratio). Other catalyst used were Zn benzenesulfonate or trifluoromethanesulfonate and Al methanesulfonate.

L23 ANSWER 12 OF 30 CAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1983:523106 CAPLUS
 DOCUMENT NUMBER: 99:123106
 TITLE: N-phenylcarbamate ester oligomers
 PATENT ASSIGNEE(S): Asahi Chemical Industry Co., Ltd., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 6 pp.
 CODEN: JIOOKAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

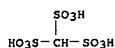
| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|-------------|------|----------|-----------------|----------|
| JP 58085852 | A2 | 19830523 | JP 1981-183739 | 19811118 |
| JP 62008430 | B4 | 19870223 | | |
| | | | JP 1981-183739 | 19811118 |

PRIORITY APPN. INFO.:
 IT 54322-33-7
 RL: CAT (Catalyst use); USES (Uses)
 (catalysts, for oligomerization of phenylcarbamate esters with
 methylene donors)
 RN 54322-33-7 CAPLUS
 CN Methanetrisulfonic acid (7CI, 9CI) (CA INDEX NAME)



AB N-Phenylcarbamate esters are oligomerized with methylene donors in the presence of solid-supported polysulfonic acids. Thus, 10g kieselguhr and 3.5g CH₂(SO₃H)₂ (I) (503-40-2) in 10 mL H₂O was dried and baked 6 h at 200° to give catalyst containing 14% I. A mixture of the above catalyst 3, Et N-phenylcarbamate (II) 8.25, and dimethoxymethane 1g in 40 mL sulfolane was heated 1 h in an autoclave at 140° to convert 56% II to oligomers (87093-19-4) containing 73% 1,1'-methylenebis(4-ethoxycarbonylaminobenzene) (10097-16-2) and 11% 1,3'-methylenebis(4-ethoxycarbonylaminobenzene) (70381-86-1).

L23 ANSWER 14 OF 30 CAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1981:174556 CAPLUS
 DOCUMENT NUMBER: 94:174556
 TITLE: 2-Hydroxyacetophenone via Fries rearrangement and related reactions. A comparative applied study
 AUTHOR(S): Hocking, Martin B.
 CORPORATE SOURCE: Dep. Chem., Univ. Victoria, Victoria, BC, V8W 2Y2, Canada
 SOURCE: Journal of Chemical Technology and Biotechnology (1979-1982) (1980), 30(11), 626-41
 CODEN: JCTBDC; ISSN: 0142-0356
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 OTHER SOURCE(S): CASREACT 94:174556
 IT 54322-33-7
 RL: CAT (Catalyst use); USES (Uses)
 (catalysts, for Fries rearrangement of Ph acetate)
 RN 54322-33-7 CAPLUS
 CN Methanetrisulfonic acid (7CI, 9CI) (CA INDEX NAME)



AB PhOAc was prepared directly from PhOH and AcOH in the presence of H₂SO₄; thermal rearrangement of PhOAc was studied in the presence of methanesulfonic and -trisulfonic acids, p-MeC₆H₄SO₃H, and sulfonated cation exchange resin. Catalysis by H₂SO₄, H₂SO₄.H₂O, H₃PO₄, NaHSO₄, and CaCl₂ was also studied. The catalysts gave o- and p-HOC₆H₄Ac, with larger
 amts. of the ortho derivative at higher temps. The rates, product ratios, and yields of these processes were compared. AlCl₃, ZnCl₂, and BF₃ all gave faster reactions than the proton acids, and higher ortho-para ratios, especially with BF₃ at low temps. The results obtained with the proton acids and other compds. and with the Lewis acids were compared. The object of the studies was to provide a com. route to pyrocatechol.

L23 ANSWER 13 OF 30 CAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1983:504727 CAPLUS
 DOCUMENT NUMBER: 99:104727
 TITLE: Methanetrisulfonic acid derivatives
 AUTHOR(S): Yagupol'skii, Yu. L.; Savina, T. I.
 CORPORATE SOURCE: Inst. Org. Khim., Kiev, USSR
 SOURCE: Zhurnal Organicheskoi Khimii (1983), 19(1), 79-82
 DOCUMENT TYPE: Journal
 LANGUAGE: Russian
 OTHER SOURCE(S): CASREACT 99:104727
 IT 54322-33-7
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reaction of, with sulfur tetrafluoride)
 RN 54322-33-7 CAPLUS
 CN Methanetrisulfonic acid (7CI, 9CI) (CA INDEX NAME)

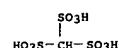
$$\begin{array}{c} \text{SO}_3\text{H} \\ | \\ \text{HO}_3\text{S}-\text{CH}-\text{SO}_3\text{H} \end{array}$$

 AB CH(SO₃H)₃ and SF₄ gave CH(SO₂F)₃, which with Br, iodine, or Me₃SiCl gave the corresponding RC(SO₂F)₂. CH₂(SO₂F)₂ and Ag₂O gave AgCH(SO₂F)₂, which with MeI or C₆F₅SCl gave, resp., MeCH(SO₂F)₂ and C₆F₅SSCH(SO₂F)₂. 4-MeC₆H₄SO₃F and trifluoromorpholinosulfur gave 4-MeC₆H₄SO₂F.

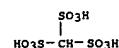
L23 ANSWER 15 OF 30 CAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1981:139146 CAPLUS
 DOCUMENT NUMBER: 94:139146
 TITLE: Tris(fluorosulfonyl)methane, HC(SO₂F)₃
 AUTHOR(S): Kloeter, Gerhard; Pritzkow, Hans; Seppelt, Konrad
 CORPORATE SOURCE: Anorg. Chem. Inst., Univ. Heidelberg, Heidelberg, D-6900/1, Fed. Rep. Ger.
 SOURCE: Angewandte Chemie (1980), 92(11), 954-5
 DOCUMENT TYPE: Journal
 LANGUAGE: German
 IT 54322-33-7
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
 (preparation and reaction of, with sulfur tetrafluoride)
 RN 54322-33-7 CAPLUS
 CN Methanetrisulfonic acid (7CI, 9CI) (CA INDEX NAME)

$$\begin{array}{c} \text{SO}_3\text{H} \\ | \\ \text{HO}_3\text{S}-\text{CH}-\text{SO}_3\text{H} \end{array}$$

 IT 75533-77-6P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
 (preparation and reaction of, with sulfuric acid)
 RN 75533-77-6 CAPLUS
 CN Methanetrisulfonic acid, barium salt (2:3) (9CI) (CA INDEX NAME)



●3/2 Ba
 IT 75533-76-5
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reaction of, with barium ion)
 RN 75533-76-5 CAPLUS
 CN Methanetrisulfonic acid, monopotassium salt (9CI) (CA INDEX NAME)

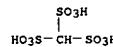


● K
 AB Successive treatment of HC(SO₃K)₃ with Ba²⁺, H₂SO₄, and SF₄ gave, via HC(SO₃Ba/2)₃ and HC(SO₃H)₃, HC(SO₂F)₃ (I), which is a monobasic acid with strength falling between those of HSO₃F and HNO₃. Treatment of I with bases gave the salts MC(SO₂F)₃ (M = K, Rb, Cs and Ag); crystal structures

L23 ANSWER 15 OF 30 CAPLUS COPYRIGHT 2006 ACS on STN (Continued)
of the K and Rb salts were detd. Treatment of AgC(SO₂F)₃ with MeI or X₂
gave, resp., MeC(SO₂F)₃ and XC(SO₂F)₃ (X = Cl, Br, I). FC(SO₂F)₃ was
prepd. by fluorinating I with XeF₂.

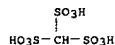
L23 ANSWER 16 OF 30 CAPLUS COPYRIGHT 2006 ACS on STN (Continued)
ACCESSION NUMBER: 1981:68557 CAPLUS
DOCUMENT NUMBER: 94:68557
TITLE: New electrolytes for direct methane fuel cells
AUTHOR(S): Brummer, S. B.; Foos, J.; McHardy, J.; McVeigh, J.;
Toland, D.; Turner, M.
CORPORATE SOURCE: EIC Corp., Newton, MA, USA
SOURCE: Report (1979), DOE/ET/11321-T1, 74 pp. Avail.: NTIS
From: Energy Res. Abstr. 1980, 5(10), Abstr. No.

15977
DOCUMENT TYPE: Report
LANGUAGE: English
IT 54322-33-7
RL: USES (Uses)
[electrolytes, for direct-methane fuel cells, development and testing
of]
RN 54322-33-7 CAPLUS
CN Methanetrisulfonic acid (7CI, 9CI) (CA INDEX NAME)

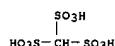


AB A program aimed at developing a fuel-cell electrolyte for the direct oxidation of CH₄ and/or impure H fuels is described. Of interest are di- and tribasic methanesulfonic acids CX₂(SO₃H)₂ and CX(SO₃H)₃ where X is H, F, or Cl. Synthetic routes to CH₂(SO₃H)₂ [503-40-2], CH(SO₃H)₃ [54322-33-7], CC₁₂(SO₃H)₂ [76371-35-2], and CC₁(SO₃H)₃ [76371-36-3] were identified and optimized. The diphenyl ester of CF₂(SO₃H)₂ was prepared and various approaches to CF(SO₃H)₃ [76371-37-4] were investigated. In parallel with the synthetic program, apparatus was designed and fabricated for the testing of the electrolytes under fuel-cell conditions. A new PTFE test cell was developed for testing small amts. of electrolyte. Electrodes with low Pt loading were developed for use in electrolyte evaluation. Optimum performance with H₃PO₄ was achieved using 1 mg Pt/cm² and 1 mg TFE 30/cm² deposited on TFE tape, supported on a Au-plated Ta screen, and sintered. Preliminary half-cell tests using CH₂(SO₃H)₂ and CH(SO₃H)₃ indicated that these acids are insufficiently stable for use as fuel-cell electrolytes. However, tests using CC₁₂(SO₃H)₂ and CC₁(SO₃H)₃ were encouraging, yielding H oxidation rates equal to or better than those using H₃PO₄. Stability tests were conducted by heating a sample of each acid at 130° for 30 days under N₂, O₂, and H₂. At the end of the test, each sample was analyzed for decomposition. In no case did IR anal. indicate significant decomposition and in the case of the chloroacids, only a trace amount of free Cl⁻ was observed. Conductivity measurements showed the aqueous acids to be of the same conductivity as aqueous H₃PO₄. The dihydrate of CH₂(SO₃H)₂ was more conductive than CF₃SO₃H·H₂O [49789-04-0] but less conductive than 100% H₃PO₄.

L23 ANSWER 17 OF 30 CAPLUS COPYRIGHT 2006 ACS on STN (Continued)
ACCESSION NUMBER: 1980:145976 CAPLUS
DOCUMENT NUMBER: 92:145976
TITLE: Crystal structure, and the infrared and Raman spectra,
spectra, of tripotassium methanetrisulfonate hydrate,
K₃[CH(SO₃)₃]·H₂O
AUTHOR(S): Hall, John R.; Johnson, Robert A.; Kennard, Colin H.
L.; Smith, Graham
CORPORATE SOURCE: Dep. Chem., Univ. Queensland, Brisbane, 4067,
Australia
SOURCE: Journal of the Chemical Society, Dalton Transactions:
Inorganic Chemistry (1972-1999) (1980), (1), 149-55
CODEN: JCDBBI; ISSN: 0300-9246
DOCUMENT TYPE: Journal
LANGUAGE: English
IT 73224-78-9
RL: PRP (Properties)
(IR and Raman spectra of aqueous)
RN 73224-78-9 CAPLUS
CN Methanetrisulfonic acid, trilithium salt (9CI) (CA INDEX NAME)



● 3 Li
IT 73224-87-0
RL: PRP (Properties)
(crystal and mol. structure, and IR and Raman spectra of)
RN 73224-87-0 CAPLUS
CN Methanetrisulfonic acid, tripotassium salt, monohydrate (9CI) (CA INDEX NAME)



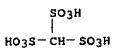
● 3 K

● H₂O

AB The crystal and mol. structure of K₃[CH(SO₃)₃]·H₂O was determined by X-ray diffraction as an aid in the assignment of the IR and Raman spectra. The structure was solved using direct methods and refined by full-matrix least squares to R 0.045 for 839 observed unique reflections. The S-C-S angles of

L23 ANSWER 17 OF 30 CAPLUS COPYRIGHT 2006 ACS on STN (Continued)
apprx. 113° indicate an expansion from tetrahedral stereochem. and the S-C bond lengths of apprx. 1.81 Å are longer than those for K₂[CH₂(SO₃)₂] (1.77 Å) and Ca[CH₃SO₃]₂ (1.75 Å). The IR (4000 to 50 cm⁻¹) and Raman spectra of K₃[CH(SO₃)₃]·H₂O and K₃[CD(SO₃)₃]·D₂O were detd. at 77° K and interpreted in accordance with the structure, and with the use of the spectra of anhyd. K₃[CH(SO₃)₃] and of aq. solns. of the sol. Li salts. The SO₃ groups show their characteristic group frequencies: v_{sym}(C-S) 762, v_{asym}(C-S) 820, δ_{sym}(CS₃) 170, and δ_{asym}(CS₃) apprx. 210 cm⁻¹, resp.. IR spectra of samples contg. the isotopically dil. HDO species confirm the presence of 2 types of H bond per H₂O mol.

L23 ANSWER 18 OF 30 CAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1975:139193 CAPLUS
 DOCUMENT NUMBER: 82:139193
 TITLE: Reactions of dipotassium diazomethanedisulfonate in aqueous solution
 AUTHOR(S): Young, J. Michael
 CORPORATE SOURCE: Dep. Pharmacol., Univ. Cambridge, Cambridge, UK
 SOURCE: Journal of the Chemical Society, Perkin Transactions 1: Organic and Bio-Organic Chemistry (1972-1999) (1974), (22), 2541-3
 CODEN: JCPRB4; ISSN: 0300-922X
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 OTHER SOURCE(S): CASREACT 82:139193
 IT 55110-91-3P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation of)
 RN 55110-91-3 CAPLUS
 CN Methanetrisulfonic acid, tripotassium salt (3CI, 9CI) (CA INDEX NAME)



● 3 K

AB Decomposition of $(\text{KO}_3\text{S})_2\text{CN}_2$ (I) in H_2O at 4° gave $(\text{KO}_3\text{S})_3\text{CH}$ and $(\text{KO}_3\text{S})_2\text{C}: \text{NNH}_2$, in N KOH at 70° gave $(\text{KO}_3\text{S})_2\text{C}: \text{NNKSO}_3\text{K}$, and in aqueous piperidine at 70° gave $(\text{KO}_3\text{S})_2\text{CH}_2$. I with MeOH gave $(\text{KO}_3\text{S})_2\text{CHOMe}$.

L23 ANSWER 19 OF 30 CAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1975:64946 CAPLUS
 DOCUMENT NUMBER: 82:64946
 TITLE: Solid catalysts for heterogeneous reactions
 INVENTOR(S): Rona, Peter
 PATENT ASSIGNEE(S): IMI (TAMI) Institute for Research and Development
 SOURCE: Ger. Offen., 21 pp.
 DOCUMENT TYPE: Patent
 LANGUAGE: German
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|-------------|------|----------|-----------------|----------|
| DE 2401958 | A1 | 19740718 | DE 1974-2401958 | 19740116 |
| US 3920582 | A | 19751118 | US 1974-430804 | 19740104 |
| GB 1446964 | A | 19760818 | GB 1974-1839 | 19740115 |
| JP 50046587 | A2 | 19750425 | JP 1974-7615 | 19740117 |

PRIORITY APPLN. INFO.: IL 1973-41330 A 19730117

IT 54322-33-7
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (catalyst preparation with, for heterogeneous catalysis or organic reactions)
 RN 54322-33-7 CAPLUS
 CN Methanetrisulfonic acid (7CI, 9CI) (CA INDEX NAME)

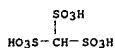
$\begin{array}{c} \text{SO}_3\text{H} \\ | \\ \text{HO}_3\text{S}-\text{CH}-\text{SO}_3\text{H} \end{array}$

AB Catalysts for heterogeneously catalyzed reactions were prepared by impregnation of carriers with sulfonic acids. Thus, 50 g $\text{SiO}_2-\text{Al}_2\text{O}_3$ pellets were treated for 30 min with 14 g benzene-1,3-disulfonic acid in H_2O at 80° , dried for 6 hr at 150° , and calcined for 6 hr at 200° to give 60 g catalyst. A $\text{H}_2\text{O}-\text{C}_2\text{H}_4$ mixture of mol. ratio 1:1 was passed over this catalyst at 195° to give a $\text{C}_2\text{H}_4-\text{C}_2\text{H}_5\text{OH}$ conversion of 0.3-0.5 mole % without splitting off acid from this catalyst.

L23 ANSWER 20 OF 30 CAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1963:468923 CAPLUS
 DOCUMENT NUMBER: 59:68923
 ORIGINAL REFERENCE NO.: 59:12707d-f
 TITLE: Alkylation of phenols
 INVENTOR(S): McConnell, Wayne V.; Davis, Herman E.
 PATENT ASSIGNEE(S): Eastman Kodak Co.
 SOURCE: 2 pp.
 DOCUMENT TYPE: Patent
 LANGUAGE: Unavailable
 PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------|------|----------|-----------------|----------|
| US 3082258 | | 19630319 | US 1960-28557 | 19600512 |

IT 54322-33-7, Methanetrisulfonic acid
 (catalyst in alkylation of phenols)
 RN 54322-33-7 CAPLUS
 CN Methanetrisulfonic acid (7CI, 9CI) (CA INDEX NAME)

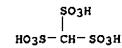


AB The preparation of 2,6-di-tert-butyl-4-methylphenol (I) from 4-methylphenol (II) and isobutylene using hydrated methanedi- or trisulfonic acid was described. I was useful as an antioxidant and stabilizer for fats and oils. Thus, 112 g. isobutylene was bubbled through a flask containing 108 g. II and 1.1 g. methanedisulfonic acid dihydrate (III) in 100 cc. benzene. In the initial stages the temperature varied from 25-40° due to the cooling effect of isobutylene refluxing in a dry ice-acetone cooled condenser. Thereafter the temperature was held at 40° for a total reaction time of 6 hrs. The supernatant liquid was decanted from the catalyst. Unreacted II (6%) and 2-tert-butyl-4-methylphenol (3%) (conversion) were extracted with aqueous NaOH. After removal of C_6H_6 , I was obtained (63% conversion), m. 68-69° (50% aqueous MeOH). Under the same conditions, 5.5 g. III gave an 88% conversion to I. Only a 20% conversion resulted from use of 1,2-ethanesulfonic acid. Benzenedisulfonic acid caused polymerization of isobutylene. When p-toluenesulfonic acid or H_2SO_4 was used in concentration of 5% based on the weight of II the product had poorer color and odor. White, odorless I could also be prepared in 64 and 80% conversions, resp., using 2.2 g. III and no solvent or using 1% by weight methanetrisulfonic acid trihydrate.

L23 ANSWER 21 OF 30 CAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1963:14557 CAPLUS
 DOCUMENT NUMBER: 58:14557
 ORIGINAL REFERENCE NO.: 58:2371g-h
 TITLE: Esterification catalysts
 INVENTOR(S): Touey, George P.; Goins, Rex H.
 PATENT ASSIGNEE(S): Eastman Kodak Co.
 SOURCE: 3 pp.
 DOCUMENT TYPE: Patent
 LANGUAGE: Unavailable
 PATENT INFORMATION:

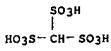
| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------|------|----------|-----------------|----------|
| US 3053884 | | 19620911 | US 1959-845336 | 19591009 |

IT 54322-33-7, Methanetrisulfonic acid
 (as catalyst for esterification)
 RN 54322-33-7 CAPLUS
 CN Methanetrisulfonic acid (7CI, 9CI) (CA INDEX NAME)



AB $\text{CH}_2(\text{SO}_3\text{H})_2$ and $\text{CH}(\text{SO}_3\text{H})_3$ are superior catalysts for preparing esters by treating saturated aliphatic mono- and polyhydroxy alcs. with phenyl dicarboxylic acids or saturated aliphatic carboxylic acids and their anhydrides. A lower concentration of catalyst is required and the ester produced is nearly colorless and is heat stable. Two moles phthalic anhydride and five moles Bu_2O were refluxed 7 hrs. in the presence of various acid catalysts. The catalyst used, the catalyst concentration based on the phthalic anhydride, and the percent phthalic acid in the product are: $\text{CH}_2(\text{SO}_3\text{H})_2$, 0.1, 0.02; $\text{CH}(\text{SO}_3\text{H})_3$, 0.1, 0.03; H_2SO_4 , 0.1, 0.35; MeSO_3H , 0.2, 1.6; $\text{Me}_2\text{CH}_2\text{SO}_3\text{H}$, 1.0, 2.0; $(\text{CH}_2\text{SO}_3\text{H})_2$, 0.2, 0.85. Data are given which show the superiority of these two catalysts for the esterification of n-octyl alc. with adipic acid and glycerol with 2-ethylhexanoic acid.

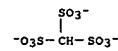
L23 ANSWER 22 OF 30 CAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1953:70596 CAPLUS
 DOCUMENT NUMBER: 47:70596
 ORIGINAL REFERENCE NO.: 47:11919f-i
 TITLE: Acid-base equilibria in glacial acetic acid
 AUTHOR(S): Smith, Thor L.; Elliott, John H.
 CORPORATE SOURCE: Hercules Powder Co., Wilmington, DE
 SOURCE: Journal of the American Chemical Society (1953), 75,
 3566-71
 CODEN: JACSAT; ISSN: 0002-7863
 DOCUMENT TYPE: Journal
 LANGUAGE: Unavailable
 IT 54322-33-7, Methanetrisulfonic acid
 (ionization in AcOH)
 RN 54322-33-7 CAPLUS
 CN Methanetrisulfonic acid (7CI, 9CI) (CA INDEX NAME)



AB Values of $\text{H}\alpha$ for dilute solns. ($5 + 10^{-4}$ to $5 + 10^{-3}$ M) of 11 strong acids in AcOH containing 0.12% water were measured by use of indicators α -naphtholbenzene (I) and o-nitroaniline. $\text{H}\alpha = -\log(\text{BH}^+)/(B) + pK_a$, where (BH^+) and (B) are the concns. of the acidic and basic forms of an indicator, and pK_a is the thermodynamic dissociation constant for the conjugate acid of the indicator. The pK_a for I was evaluated as 0.53. The order of increasing acid strength at equal molarities is: HCl, methanesulfonic, sulfuric, carboxymethanesulfonic, chloromethanesulfonic, chlorocarboxymethanesulfonic, HBr, perchloric, methanesulfonic, chloromethanesulfonic, and methanetrisulfonic acids. $\text{H}\alpha$ values for anhydrous solns. of 4 monobasic acids at $5 + 10^{-3}$ M were measured, and from the increased acidity found, equilibrium consts. for the reaction of the acids with water were calculated. H_2SO_4 was found to be monobasic. Dissociation consts., K_a , of HCl, HBr, HClO_4 , and H_2SO_4 in AcOH (calculated from conductivity data of Kolthoff and Willman (C.A. 28, 3644.1)) are $5.1 + 10^{-10}$, $1.9 + 10^{-7}$, $9 + 10^{-7}$, and $7.4 + 10^{-9}$, resp. The fact that values of ΔpK_a from conductivity and from $\text{H}\alpha$ data are in reasonable agreement shows that equilibrium in AcOH involve, primarily, undissocd. species.

L23 ANSWER 23 OF 30 CAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1950:28491 CAPLUS
 DOCUMENT NUMBER: 44:28491
 ORIGINAL REFERENCE NO.: 44:5552b-d
 TITLE: Aluminum methionate
 INVENTOR(S): Christian, John E.; Jenkins, Glenn L.
 PATENT ASSIGNEE(S): Purdue Research Foundation
 DOCUMENT TYPE: Patent
 LANGUAGE: Unavailable
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

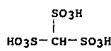
| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|--|----------|-----------------|----------|
| US 2504107 | | 19500418 | US 1946-701091 | 19461004 |
| IT 855840-41-4 | Methanetrisulfonic acid, aluminum salt (preparation of) | | | |
| RN 855840-41-4 | CAPLUS | | | |
| CN Methanetrisulfonic acid, aluminum salt (5CI) (CA INDEX NAME) | | | | |



AB Certain Al alkyl sulfonates are effective as antiperspirants, e.g. Al methionate (I), Al ethanesulfonate, Al methanetrisulfonate, Al methanesulfonate, Al sulfoacetate, Al o-sulfobenzoate. General requirements are: the Al ion or its equivalent; one or more sulfo groups; an alkyl group. The more sulfo groups, the greater is the astringency. I is prepared by adding a solution of $\text{Al}_2(\text{SO}_4)_3$ to a solution of Ca methionine in water, digesting the mixture for 10 min., and filtering it. The solution of I is concentrated, and EtOH is added until I crystallizes out. I is hygroscopic, soluble in water, does not crystallize out of astringent creams. The other Al salts are prepared by treating the respective Ba compds. with $\text{Al}_2(\text{SO}_4)_3$ solution. These antiperspirants are harmless to skin and fabrics.

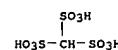
L23 ANSWER 24 OF 30 CAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1949:27346 CAPLUS
 DOCUMENT NUMBER: 43:27346
 ORIGINAL REFERENCE NO.: 43:5035h-i
 TITLE: Reaction of acetylene and acetic acid. Societe des usines chimiques Rhone-Poulenc
 DOCUMENT TYPE: Patent
 LANGUAGE: Unavailable
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|----------|-----------------|----------|
| FR 667066 | | 19410926 | FR | 19400224 |
| IT 54322-33-7 | Methanetrisulfonic acid (catalyst of HgO , HgSO_4 and, in C_2H_2 reaction with AcOH) | | | |
| RN 54322-33-7 | CAPLUS | | | |
| CN Methanetrisulfonic acid (7CI, 9CI) (CA INDEX NAME) | | | | |



AB With a mixture of sulfonic acids containing $\text{CH}-(\text{SO}_3\text{H})_3$ 36, HgSO_4 21, and HgO 14 as catalyst, AcOH 5600 g. and C_2H_2 give CH_2CHOAc or MeCH(OAc)_2 . The sulfonic acid mixture is prepared by adding 63% H_2SO_4 1070 to Ac_2O 400 g. slowly so that the temperature does not rise above 115°, letting stand 3 hrs. at 120°, adding glacial AcOH 500 g. with the temperature at 120° another 3 hrs., and then more glacial AcOH 3000 g., with stirring 0.5 hr. The mixture contains 15% $\text{CH}-(\text{SO}_3\text{H})_3$.

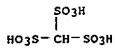
L23 ANSWER 25 OF 30 CAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1947:11308 CAPLUS
 DOCUMENT NUMBER: 41:11308
 ORIGINAL REFERENCE NO.: 41:2303e-g
 TITLE: Diameter changes of gelatinized coacervate drops of the complex coacervate gelatin-gum arabic, resulting from a change in pH of, or from the addition of neutral salts to, the surrounding medium. I
 AUTHOR(S): de Jong, H. G. Bungenberg; Landsmeer, J. M. F.
 CORPORATE SOURCE: Univ., Leiden
 SOURCE: Recueil des Travaux Chimiques des Pays-Bas et de la Belgique (1946), 65, 606-13
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 IT 55110-91-3, Methanetrisulfonic acid, tripotassium salt
(effect on diameter changes of coacervate drops of gelatin-gum arabic)
 RN 55110-91-3 CAPLUS
 CN Methanetrisulfonic acid, tripotassium salt (3CI, 9CI) (CA INDEX NAME)



AB Diameter changes of coacervate drops ($100-200 \mu$) reached equilibrium quickly (5-10 min.) in media of a given pH or salt concentration. The changes were followed microscopically at salt concns. low enough (10-40 milliequiv. per l.) to allow reversibility in the swelling and shrinking. The diameter is a min. at the pH (3.7) where the H_2O content is a min. Reversible swelling due to addition of a salt (KCl , CaCl_2 , LaCl_3 , K_2SO_4 , or $\text{K}_3\text{CH}(\text{SO}_3)_3$) is least for the 1-1 valence type and increases as the salt deviates from this valence type (double valence rule).

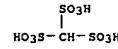
L23 ANSWER 26 OF 30 CAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1944:16250 CAPLUS
 DOCUMENT NUMBER: 38:16250
 ORIGINAL REFERENCE NO.: 38:2347f-g
 TITLE: Reaction of oleum with AcOH or Ac2O
 INVENTOR(S): Cockerille, Frank O.
 PATENT ASSIGNEE(S): E. I. du Pont de Nemours & Co.
 DOCUMENT TYPE: Patent
 LANGUAGE: Unavailable
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|----------|-----------------|----------|
| US 2333701 | | 19431109 | US 1940-365947 | 19401116 |
| IT 54322-33-7 | Methanetrisulfonic acid (preparation of) | | | |
| RN 54322-33-7 | CAPLUS | | | |
| CN Methanetrisulfonic acid (7CI, 9CI) (CA INDEX NAME) | | | | |



AB Methanetrisulfonic acid is prepared by a process involving adding HOAc or Ac2O to oleum, in a proportion of 4 to 7 parts of oleum to each part of the HOAc or Ac2O, the temperature being allowed to rise gradually to 65-85° during the addition of 50-75%. and not above 90° during the addition of the remainder, of the Ac2O or HOAc, and completing the reaction by holding the mixture at 90-100°.

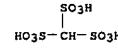
L23 ANSWER 27 OF 30 CAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1932:23284 CAPLUS
 DOCUMENT NUMBER: 26:23284
 ORIGINAL REFERENCE NO.: 26:2413g-i,2414a-d
 TITLE: The chlorination of methanetrisulfonic acid
 AUTHOR(S): Backer, H. J.
 SOURCE: Recueil des Travaux Chimiques des Pays-Bas et de la Belgique (1932), 51, 374-80
 CODEN: RTCPB4; ISSN: 0370-7539
 DOCUMENT TYPE: Journal
 LANGUAGE: Unavailable
 IT 54322-33-7, Methanetrisulfonic acid
(chlorination of)
 RN 54322-33-7 CAPLUS
 CN Methanetrisulfonic acid (7CI, 9CI) (CA INDEX NAME)



AB cf. C. A. 25, 75. The chlorination of CH(SO₃H)₃ may be carried out by heating 7.8 g. of the tri-K salt and 0.1 g. I in 60 cc. water containing 2 g. Cl in a sealed tube at 200° for 10 hrs. After evaporating the contents of the tube and recryst. the residue 6 times from its weight of water, tri-K chloromethanetrisulfonate was obtained in a pure state in 70% yield; it does not contain H₂O; at 25° 100 g. water dissolves 3.38 g.; crystallographic properties: monoclinic system; a:b:c = 0.8040:1:0.7659; β = 87° 52'; observed forms: (hivin.111), (010), (111), (101) and (011); angles: (010):(011) = 52° 34'; (010):(111) = 61° 27'; (100):(hivin.101) = 42° 36'; (100):(101) = 44° 33'; (010):(hivin.111) = 60° 38'. For the preparation of the free acid and other salts the trityrchnine salt, which crystallizes without H₂O, was used. The free acid (4.5 H₂O) m. 160-5° but 180-2° in the presence of P2O5; at 25°, 100 g. water dissolves 254.7 g. of the anhydrous acid. Normal Li salt (8 H₂O): 100 g. water dissolves 109.9 g. of the anhydrous salt; crystalline properties: rhombic system; a:b:c = 0.933:1:0.708; observed forms (110), (011) and (010); angles: (110):(010) = 46° 59'; (1.hivin.111):(100) = 52° 43'; (010):(011) = 54° 50'; (110):(011) = 66° 51'. The normal Na salt does not contain H₂O on crystallization from a saturated hot solution but 3 H₂O on evaporating a solution at room temperature; at 25°, 100 g. water dissolves 21.8 g. of the trihydrate. Normal Rb salt (1H₂O): 100 g. water dissolves at 25°, 3.34 g. of the anhydrous salt; crystalline properties: rhombic system; a:b:c = 0.9827:1:0.5437; observed forms (101), (010), (111), (221), (100), (041), (001) and (210), sometimes (110); angles: (001):(111) = 37° 48'; (100):(110) = 45° 30'; (001):(010) = 29° 1'; (001):(221) = 57° 20'; (001):(041) = 65° 23'; (100):(210) = 26° 12'; (101):(111) = 25° 20'; the normal Cs salt (1 H₂O) consists of rhombic plates; at 25°, 100 g. water dissolves 5.49 g. of the crystallized salt; crystallographic properties: rhombic system; a:b:c = 0.9546:1:1.0845; observed forms (100), (001), (010), (111), (102), (101), (210) and (112); angles: (100):(101) = 41° 39'; (100):(210) = 25° 45'; (100):(112) = 63° 47'; (100):(111) = 53° 0'.

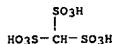
L23 ANSWER 27 OF 30 CAPLUS COPYRIGHT 2006 ACS on STN (Continued)
 (010):(111) = 54° 5'; (001):(111) = 57° 30'; (001):-(102) = 29° 25'; (010):(hivin.110) = 43° 50'; plane of the optical axes (100); the sharp bissectrix is (010); p > v; the crystals are optically negative. The normal Tl salt is anhyd. Normal Ba salt (9H₂O); at 25°, 100 g. water dissolves 0.845 g. anhyd. salt; crystallographic properties: rhombic system; a:b:c = 0.834:1:0.564; observed forms (212), (010), (110), (111) and (120); angles: (010):(110) = 50° 11'; (010):(111) = 64° 57'; (010):(212) = 76° 47'; (010):(120) = 31° 30'; plane of the optical axes (010). Normal NH₄ salt, anhyd.; crystallographic properties: rhombic system; a:b:c = 0.9573:1:1.7022; observed forms (001), (011), (101), (110) and (211); angles: (001):-(011) = 59° 34'; (100):(101) = 29° 21'; (100):(110) = 43° 44'; (100):(211) = 29° 16'. PC15 with the free acid does not give the trisulfonyl chloride, SO₂ being evolved; therefore, derivis. could not be prep'd.

L23 ANSWER 28 OF 30 CAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1932:8729 CAPLUS
 DOCUMENT NUMBER: 26:8729
 ORIGINAL REFERENCE NO.: 26:962g-i
 TITLE: The salts of methanetrisulfonic acid
 AUTHOR(S): Backer, H. J.; Terpstra, P.
 SOURCE: Recueil des Travaux Chimiques des Pays-Bas et de la Belgique (1931), 50, 1069-77
 CODEN: RTCPB4; ISSN: 0370-7539
 DOCUMENT TYPE: Journal
 LANGUAGE: Unavailable
 IT 54322-33-7, Methanetrisulfonic acid
(and salts)
 RN 54322-33-7 CAPLUS
 CN Methanetrisulfonic acid (7CI, 9CI) (CA INDEX NAME)



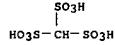
AB The normal K, Ag and Tl salts of methane-trisulfonic acid have been described (cf. Backer, C. A. 25, 915); the present paper deals with other salts, which were prepared in the usual way. Methanetrisulfonic acid contains 3H₂O, m. 162-162.5°; 100 g. of water at 25° dissolves 221 g. of the anhydrous acid and 510 g. of the crystallized compound. Detailed crystallographic data are given for the normal NH₄ salt (contains 0.5 H₂O; crystals are of the monoclinic system), the normal Li salt (4 H₂O; monoclinic system), normal Na salt (3 H₂O; very thin monoclinic plates), normal Rb salt (1 H₂O; rhombic system, bishexagonal class), normal Cs salt (1 H₂O; monoclinic system), normal Ag salt (1 H₂O; triclinic system), normal Ca salt (12 H₂O; rhombic system), normal Ba salt (9 H₂O; monoclinic crystals), normal La salt (6 H₂O; monoclinic crystals), and normal cinchonine salt (8 H₂O; rhombic, pseudotetragonal crystals). The mono-K dibrucine salt was obtained from the tri-K salt and an equivalent amount of brucine acetate; it contains 9 H₂O. The K and Rb salts are isomorphous and give mixed crystals. Sometimes small anhydrous triclinic crystals of the Cs salt were obtained and a triclinic dihydrate was prepared.

L23 ANSWER 29 OF 30 CAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1931:8598 CAPLUS
 DOCUMENT NUMBER: 25:8598
 ORIGINAL REFERENCE NO.: 25:915a-i
 TITLE: Methanetrisulfonic acid
 AUTHOR(S): Becker, H. J.; Klaassens, K. H.
 SOURCE: Recueil des Travaux Chimiques des Pays-Bas et de la Belgique (1931), 49, 1107-17
 CODEN: RTCPB4; ISSN: 0370-7539
 DOCUMENT TYPE: Journal
 LANGUAGE: Unavailable
 IT 54322-33-7, Methanetrisulfonic acid
 (and salts)
 RN 54322-33-7 CAPLUS
 CN Methanetrisulfonic acid (7CI, 9CI) (CA INDEX NAME)

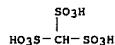


AB CH(SO₃H)₃ has already been prepared: (1) by Theilkkuhl (Ann. 147, 134 (1868)) on heating Ca Me sulfate with H₂S₂O₇; (2) by Bagnall (J. Chemical Society, 75, 278 (1891)) on sulfonation of Ac derivs. of aromatic amines; (3) by oxidation of HSC(SO₃H)₃ (Albrecht, Ann. 161, 139 (1872); cf. Becker, C. A. 24, 76); (4) by the action of K₂SO₃ on O₂NCH(SO₃H)₂ (Rathke, Ann. 167, 219 (1873)), which is formed by the action of K₂SO₃ of O₂NCl₃; it is, however, to be recommended to isolate the O₂NCH(SO₃H)₂, which is formed as an intermediate product; (5) on heating N₂C(SO₃H)₂ with acids, water or KHSO₃ (von Pechmann, Ber. 28, 2382 (1895); Fanti and Fisch, C. A. 24, 1841); (6) by sulfonation of CH₂(SO₃H)₂. All these methods, except 1, are discussed in the present paper. Method 6: On heating CH₂(SO₃H)₂ with SO₃ (2.5 mols.) during 5 hrs. at 170°, CH(SO₃H)₃ may be obtained as the K salt with 10% yield. Method 2: sulfonation of PhNHAc 0.5 mol. AcNHPh is introduced slowly into 600 g. fuming H₂S₂O₇ containing 35% SO₃, the mixture being heated 3 hrs. at 130° with mech. stirring; yield of the tri-K salt 57%; on carrying out the same reaction with succinimidile, a small yield of the same compound was obtained. Method 3: 0.1 mol. HSC(SO₃K)₃, in 1 l. water is oxidized at room temperature by a current of Cl with the gradual addition of 80 g. KHO₃; yield 90%. Method 4: O₂NCH(SO₃H)₂ was prepared according to Rathke (loc. cit.) by adding 82 g. O₂NCl₃, gradually to 450 g. K₂SO₃ in 900 cc. water, heated to 75°, and keeping the temperature at 80°; yield 40% of the anhydrous di-K salt, which dissolves in water at 25° to the extent of 1.16%. The normal strychnine salt of O₂NCH(SO₃H)₂ crystallizes with 3.5 H₂O, the free acid itself with 2 H₂O while the normal Na and Tl salts crystallize without H₂O; both the latter salts are easily soluble in water. On heating the K salt with K₂SO₃ in a sealed tube at 140°, CH(SO₃H)₃ is obtained in 67% yield. Method 5: N₂C(SO₃K)₂, prepared according to von Pechmann (loc. cit.), may be converted into CH(SO₃H)₃ by the action of KHSO₃ at 60° and finally on the water bath (yield 62%), decomposing the compound with water or introducing it into dilute

L23 ANSWER 30 OF 30 CAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1930:16847 CAPLUS
 DOCUMENT NUMBER: 24:16847
 ORIGINAL REFERENCE NO.: 24:1841a-b
 TITLE: Methanetrisulfonic acid
 AUTHOR(S): Fanti, Paul; Fisch, Julius
 SOURCE: Journal fuer Praktische Chemie (Leipzig) (1930), 124, 159-62
 CODEN: JPCEAO; ISSN: 0021-8383
 DOCUMENT TYPE: Journal
 LANGUAGE: Unavailable
 IT 55110-91-3, Methanetrisulfonic acid, hydroxy-, tripotassium salt
 (preparation of)
 RN 55110-91-3 CAPLUS
 CN Methanetrisulfonic acid, tripotassium salt (3CI, 9CI) (CA INDEX NAME)



IT 54322-33-7, Methanetrisulfonic acid
 (salts)
 RN 54322-33-7 CAPLUS
 CN Methanetrisulfonic acid (7CI, 9CI) (CA INDEX NAME)



AB N₂C(SO₃K)₂ and KHSO₃ give CH(SO₃H)₃ and not HOC(SO₃K)₃ (cf. v. Pechmann, Ber. 28, 2374 (1898)). The K, Ba and Ag salts were prepared and analyzed.

L23 ANSWER 29 OF 30 CAPLUS COPYRIGHT 2006 ACS on STN (Continued)
 HC₁, the latter reaction giving a 40% yield. On introducing the diazo compd. into concd. HCl at 0°, C₁CH(SO₃H)₂ is obtained. The following salts of CH(SO₃H)₃ and the acid itself were prep'd. in the usual way: The free acid with 3.5 H₂O, m. 156°; the tri-K salt, rhombic prisms with 1 H₂O; 100g. of water dissolve at 25°, 1.202 g. of the anhyd. salt and 1.261 g. of the crystd. salt. Crystallographic properties
 (P. TERPSTRA): rhombic system, bisphenoidal class D2; a: b: c = 0.9977:1:1.3604. Forms: a = (100); b = (010); c = (001); p = (101); m = (110); o = (111); Q = (1.hivin.11); q = (011); s = (121); angles: a: m = 44° 56'; c:p = 52° 38'; a: * = 51° 28'; b:c = 51° 34'; c: q = 52° 36'; o: s = 19° 22'. The crystals obtained by evapn. at ordinary temp. have a larger dimension in the direction of the b-axis. The crystals show a marked piezoelectricity; the plane of the optical axes is (001); the a-axis is the sharp bissectrix; p<v. For Na light 2c 83° 1'; a = 1.513; β = 1.5253; γ = 1.5270; 2V = 51° 45'. The tri-Tl salt also contains 1 H₂O; crystallographic properties (P. TERPSTRA): rhombic system, bisphenoidal class; a: b: c: = 0.9971:1:-1.3009; forms: m = (110); p = (101); q = (011); a = (1.hivin.11); * = (111); the crystals possess either the form a or the form *, which have never been found to occur in the same crystal. Angles: m: m = 90° 10'; p:p = 105°4'; q:q = 104°54'; m:m = 123°0'; p:m = 38°20'; m:q = 38°29'. The plane of the optical axes is (001); the sharp bissectrix (010). By means of a prism formed by (1.hivin.11) and (1.hivin.11) the refractive index β has been detd. to be 1.739, 1.743, 1.768 for λ = 578, 546, 436, resp. The crystals are piezoelectrical. The tri-Ag salt contains 1 H₂O; the Ba salt, 9 H₂O; the latter is difficultly sol. in water, only to the extent of 0.1%. On mixing without precautions the solns. of the K salt and BaCl₂, a double salt of Ba and K is obtained, CHO₉S₃KBa₃H₂O, which, after several recrysts. from a large amount of water, gives the pure Ba salt. The Ca salt contains 12 H₂O and the La salt 6 H₂O (cf. Becker and Klaassens, C. A. 24, 4729).

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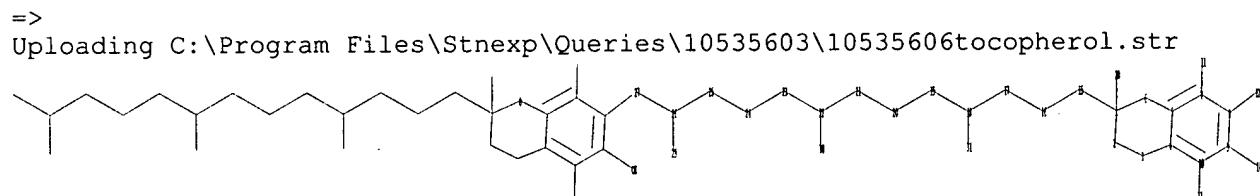
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ring nodes :
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20-21 21-22 22-23 22-30 23-24 24-25 25-26 26-27 26-29
ring bonds :
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exact bonds :
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1-15 1-28 7-11 8-12 10-13 15-16 16-17 17-18 18-19 18-31 19-20 20-21
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normalized bonds :
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Match level :

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27:CLASS 28:CLASS 29:CLASS 30:CLASS 31:CLASS

L24 STRUCTURE UPLOADED

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L25 446 SEA SSS FUL L24

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=> s 125

L26 17222 L25

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BATCH **COMPLETE**
PROJECTED ITERATIONS: 6 TO 266
PROJECTED ANSWERS: 0 TO 0

L27 0 SEA SSS SAM L21

L28 0 L27

L29 0 L26 AND L28

=> s 121 and 119
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SEARCH TIME: 00.00.01

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PROJECTED ITERATIONS: 6 TO 266
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L30 0 SEA SSS SAM L21

L31 0 L30

37 L19
L32 0 L31 AND L19

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